Open access policies, practices and licensing: a review of the literature in Australia and selected jurisdictions

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July 2009

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Preface

This report has been produced as part of the work program of the project "*Enabling Real-Time Information Access in Both Urban and Regional Areas*", established within the Cooperative Research Centre for Spatial Information (CRCSI).[1] It sets out the findings of an extensive review of published materials dealing with policies and practices relating to information access and reuse, with a particular focus on materials generated, held or funded by public sector bodies. Projects which have run in parallel with this one are an extensive review by Dr John Cook of the economic literature on information access and reuse[2] and a wide-ranging study of developments in access to and reuse of PSI and science data conducted by Professor Anne Fitzgerald.[3]

The full economic, cultural and environmental value of information produced or funded by the public sector can be realised through enabling greater access to and reuse of the information. To do this effectively it is necessary to describe and implement a policy framework that supports greater access and reuse among a distributed, online network of information suppliers and users. The objective of this study, then, was to identify relevant materials dealing with policies, principles and practices relating to information access and reuse, not only in Australia but in other key jurisdictions internationally. Historically, much of the discussion in Australia about access to public sector information (PSI) has focused on spatial information collected, used and distributed by governments. Nevertheless, and even though the project was carried out under the auspices of CRC for Spatial Information, the study was not confined to statements of policy and practices in relation to "spatial information", notwithstanding that this term is now generally given a very broad meaning. In the early stages of the research project it became apparent that there was a scarcity of materials on access to and reuse of spatial data in Australia but there was a rapidly expanding body of materials dealing more generally with access to PSI (including spatial data, science research data and environmental information). It was decided that, to properly understand policies and practices relating to spatial information, it would be necessary to adopt a broader focus and include in the review materials dealing generally with PSI and science data.

In addition, the technological developments and changes in research methodologies during the last decade have resulted in greater attention being focused on non-spatial information and data (including academic publications) and science research data. These developments mean that it was necessary to set the scope of the literature review more broadly than materials dealing specifically with issues of access to and reuse of spatial information. As a result, the literature review extends to cover materials relating to PSI generally, including publications and science data produced by public sector and publicly-funded research projects. As well as the review of literature on information access and reuse, this report contains, in Appendix 1, extracts from the texts of selected policy documents.

The literature review research was carried out from 2007 to 2009 by a team of researchers from the Queensland University of Technology (QUT) Faculty of Law and the Queensland Government, led

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[1] This report has been produced as part of the Apollo project within the framework of the CRC for Spatial Information's project 3.05.

[2] Dr Cook's research has been carried out as project Hermes within the framework of the CRC for Spatial Information's project 3.05.

[3] For reports of this project, see the auPSI website at http://www.aupsi.org.

by Professor Anne Fitzgerald (QUT). Neale Hooper was the team researcher from the Queensland Government. Other members of the QUT team of legal researchers who assisted at various times were Kylie Pappalardo, Baden Appleyard and Karen Buttigieg. Cheryl Foong assisted with cite-checking and formatting. Special thanks are extended to two overseas colleagues who greatly assisted us in our understanding of developments their respective jurisdictions: Keitha Booth of New Zealand's State Services Commission who guided us through New Zealand developments and assisted in assembling the materials in Chapter 2; and Chris Corbin of the European Union's ePSIplus project[4] who led us through key developments in the United Kingdom and Europe and, in particular, the ongoing work on the implementation of the European Directive on reuse of public sector information (2003).

The materials identified in the review are in a range of formats and come from a wide variety of sources. As well as materials that have been formally published in print form (books, journal articles and official reports of governments and organisations), the review includes web-published versions of official reports, books, academic journal articles, articles in professional newsletters, etc; newspaper articles published in online versions of newspapers; and materials published on the internet, e.g. blogs. The literature review is organised on a jurisdictional basis, commencing with Australia[5] and New Zealand.[6] Developments in key overseas jurisdictions are grouped on a regional basis: Europe and the United Kingdom,[7] the United States[8] and Canada.[9] The review also identifies materials produced by international organisations including the United Nations (UN) and bodies within the UN system (such as the United Nations Educational, Scientific and Cultural Organisation (UNESCO)), the Organisation for Economic Cooperation and Development (OECD), and the International Science Union's Committee on Data for Science and Technology (CODATA).[10]

It is apparent from this review that, even during the period in which this study has been carried out (2007 to 2009), support for facilitating access to and reuse of PSI and publicly funded science data has increased markedly. In jurisdictions such as Europe and the United States which had already taken the lead in the development of access and reuse policies and principles, the focus in recent years has been on their effective implementation. But even in jurisdictions (including Australia) which have lacked a comprehensive policy framework for access to PSI, there is a growing awareness that the full potential of PSI and the research results of publicly funded research projects will only be realised through improved arrangements for access and reuse. The ability of the global community to address pressing challenges in the environmental, economic, health, cultural, and other fields is dependent on realising the full potential of information and data, which demands improved levels of access and clearer reuse rights.

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Brisbane, 14 July 2009

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[4] See http://www.epsiplus.net/.
[5] Chapter 1.
[6] Chapter 2.
[7] Chapter 4.
[8] Chapter 5.
[9] Chapter 6.
[10] Chapter 3.

Overview

Governments generate a vast and important flow of information and content which is produced by their employees and contractors, or by other organisations that receive government funding, across a very broad range of scientific, social, cultural and economic activity. The term "public sector information" (PSI) is used here in a broad sense to include information and data produced by the public sector as well as materials that result from publicly-funded cultural, educational and scientific activities. It can include policy documents and reports of government departments, public registers, legislation and regulations, meteorological information, scientific research databases, statistical compilations and datasets, maps and geospatial information[11] and numerous other data and information products produced by government for public purposes.

The importance of ensuring that such information flows to those who want access to it in order to use and reuse it is increasingly recognised. The value of PSI derives from its use. A great deal of the information and content generated by governments and publicly-funded researchers is of value and relevance to the broader community. Properly used, as well as contributing to social and economic development, advancing education, research and innovation, it enhances public health and safety, creates opportunities for engagement between government and citizens, fosters transparency of governance and promotes democratic ideals. It is an essential foundation of an informed, participatory society and provides a foundation for evidence-based policy and decision-making, for example, in the planning and delivery of health and social welfare programs. The ability of the global community to address pressing challenges in the environmental, economic, health, cultural, and other fields is dependent on realising the full potential of this information and data, which demands improved levels of access and clearer reuse rights.

The value of PSI increases when restrictions on access and reuse are removed and it is made available in common digital formats downloadable from internet websites.[12] From the emergence of the world wide web in the early 1990s, the Australian government embraced the internet as a medium for communicating with citizens, civil society and business. Government agencies quickly grasped the advantages of e-mail and the internet for disseminating information both within the public sector as well as from government to citizens and other stakeholders. Advances in information and communication technologies - greatly increased computing power and storage capacity, grid and cloud computing, high speed broadband networks, the collaborative web,

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[11] The terms "spatial information" and "geospatial information" are used in the same sense as the definition in the Office of Spatial Data Management's Spatial Data Access and Pricing Policy: "Spatial data is information about the location and attributes of features that are on, above or beneath the surface of the earth. In other words, it is data that can be mapped. The terms "land information", "geographic information" and "geospatial data" are also used to describe spatial data." See Commonwealth Interdepartmental Committee on Spatial Data Access and Pricing, A Proposal for a Commonwealth Spatial Data Access and Pricing Policy (June 2001) p 7, available at http://www.osdm.gov.au/OSDM/Policies+and+Guidelines/Spatial+Data+Access+and+Pricing/default.aspx accessed 14 September 2008.

[12] See, for example the Data.gov website established by the US federal government. For further discussion, see Ed Felten, David Robinson, Harlan Yu and Bill Zeller, *Government Data and the Invisible Hand*, (2009) 11 Yale Journal of Law and Technology 160, available at http://www.yjolt.org/11/fall/robinson-160. This paper was referred to by the UK Power of Information Taskforce in its final report published in March 2009, see http://poit.cabinetoffice.gov.uk/poit/wp-content/uploads/2009/03/poit-report-final-doc.doc.

simulation and virtual worlds - have brought about a revolution.[13] These developments, which have fundamentally changed how information (especially information in digital form) is generated, shared, distributed and used, have immediate relevance for governments and public sector entities. For the public sector, the new technologies have brought about changes not only in the volume and kind of information that is generated and how it is produced, but also in how – and by whom – it is used.

While the importance of ensuring that government information flows to those who want or need to access and use it is increasingly acknowledged, it is also clear that policies to bring this about are unlikely to be achieved with simple 'strokes of the pen'. If governments are to ensure that PSI can be accessed, used and reused, they need to develop an integrated and comprehensive information policy framework that supports access and reuse among a distributed, online network of information suppliers and users. This review of the materials published in Australia and key overseas jurisdictions clearly shows that the emerging international consensus on the social and economic benefits flowing from access to PSI and publicly funded research data is reflected in policies and practices developed at national, regional and international levels. In the United States and Europe, which have taken the lead in developing national information strategies, attention in recent years has been focused on the introduction of administrative procedures and technologies designed to ensure that access policies will be effectively implemented. In the United States and the United Kingdom, the role of coordinating agencies[14] has been strengthened and web 2.0 technologies have been used to improve access to PSI and establish new channels of interactive communication between government and citizens.[15] At the international level, the cause of promoting access to PSI and publicly funded research outputs has been advanced by inter-governmental and international organisations, bodies within the UN system (such as the United Nations Educational, Scientific and Cultural Organisation (UNESCO)), the Organisation for Economic Cooperation and Development (OECD), and the International Science Union's Committee on Data for Science and Technology (CODATA).

Australia

Australia does not yet have a national policy framework addressing access to and use of PSI, an important point of difference with the United States, the United Kingdom and European countries. The situation with respect to PSI access and use has been fragmented and lacking a coherent policy foundation, whether viewed in terms of interactions within or among the different levels of government at the local, State/Territory and Federal levels, or between the government, academic

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[13] See the Submission of the Intellectual Property: Knowledge, Culture and Economy (IP: KCE) Research Program, Queensland University of Technology (QUT) to the Department of Broadband, Communications and Digital Economy's *Digital Economy: Future Directions* consultation paper, prepared by Brian Fitzgerald, Anne Fitzgerald, Jessica Coates and Kylie Pappalardo, 4 March 2009, p 2, available at http://www.dbcde.gov.au/digital_economy/digital_economy_consultation/submissions (under "Queensland University of Technology QUT Law Faculty) at 10 June 2009.

[14] In the United States, the lead agency responsible for the federal government's information strategy is the Office of Management and Budget (OMB) (see http://www.whitehouse.gov/omb/), while in the United Kingdom the lead agency is the Office of Public Sector Information (see http://www.opsi.gov.uk).

[15] See, for example, the data.gov site established in 2009 by the United States government as part of the Obama administration's Open Government initiative and the work of the United Kingdom's Power of Information Task Force (see http://powerofinformation.wordpress.com/).

and private sectors.[16] Some important practices and initiatives can be identified but they are only loosely connected, deal with different aspects of access and reuse and lack any formal coordination.[17]

However, this situation is beginning to change, with the need for a comprehensive national information policy framework to be developed having been recognised in the Review of the National Innovation System (NIS) in 2008[18] and acknowledged in ministerial addresses in 2008 and 2009. The *Venturous Australia – Building Strength in Innovation* ("Venturous Australia") report produced by the NIS review panel[19] recommended that a National Information Strategy should be established, to optimise the flow of information in the Australian economy.[20] It further recommended that, "to the maximum extent practicable, information, research and content funded by Australian governments should be made freely available over the internet as part of the global public commons",[21] that "Australian governments should adopt international standards of open publishing as far as possible"[22] and that PSI "should be released under a creative commons licence".[23] In another important development, the *Digital Economy, Future Directions* consultation paper released by the Department of Broadband, Communications and the Digital Economy in December 2008 raised "Open Access to Public Sector Information"[24] as a key issue for discussion,

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[16] See Ian Reinecke, *Information Policy and E-Governance in the Australian Government: Report: A report for the Department of Prime Minister and Cabinet*, March 2009 (updated to 31 July 2009), at p13. Reinecke comments: "There is evidence that Australia has lagged behind the countries that it takes as points of reference in public policy development and practice in recent years. The information policy and management agenda has at various times in the last decade received some attention but has been somewhat subsumed by issues more related to technical matters and ICT procurement practice." Available at http://www.dpmc.gov.au/publications/information_policy/index.cfm, accessed 4 September 2009.

[17] Ibid. Reinecke comments at p13 that "a comprehensive and coordinated approach to information management has not had recent strong emphasis".

[18] The Review of the National Innovation System was commissioned by Senator Kim Carr, Minister for Innovation, Industry, Science and Research on 22 January 2008. The review panel, chaired by Dr Terry Cutler, was asked to identify gaps and weaknesses in Australia's innovation system and recommend ways to correct them. The panel considered evidence of both market failure — where commercial incentives are insufficient to induce socially and economically desirable behaviour; and system failure — where the scope for innovation is limited by policy and institutional shortcomings. The panel released its final report (a "Green Paper"), *Venturous Australia - Building Strength in Innovation,* on *29* August 2008. See generally http://www.innovation.gov.au/innovationreview/Pages/home.aspx.

[19] Cutler & Company, *Venturous Australia - Building Strength in Innovation,* report on the Review of the National Innovation System, for the Australian Government Department of Innovation, Industry, Science and Research, 29 August 2008. Note especially Recommendations 7.7, 7.8 and 7.14; available at http://www.innovation.gov.au/innovationreview/Pages/home.aspx accessed on 11 June 2009.

[20] Ibid. In Recommendation 7.7 which states:
Australia should establish a National Information Strategy to optimise the flow of information in the Australian economy.
The fundamental aim of a National Information Strategy should be to:
- utilise the principles of targeted transparency and the development of auditable standards to maximise the flow of information in private markets about product quality; and
- maximise the flow of government generated information, research, and content for the benefit of users (including private sector resellers of information).

[21] Recommendation 7.14 states: "To the maximum extent practicable, information, research and content funded by Australian governments – including national collections – should be made freely available over the internet as part of the global public commons. This should be done whilst the Australian Government encourages other countries to reciprocate by making their own contributions to the global digital pubic commons."

[22] Recommendation 7.8

[23] Recommendation 7.8

[24] See Australian Government, Department of Broadband, Communications and the Digital Economy's *Digital Economy: Future Directions* consultation paper, 18 December 2008, at

observing that there is increasing support for "the notion that the Australian Government should provide access to public sector information on terms that clearly permit the use and re-use of that information."[25] The final report, *Australia's Digital Economy: Future Directions* expressly recognised "the digital economy and innovation benefits generated by open access to PSI, subject to issues such as privacy, national security and confidentiality".[26] Enabling open access to PSI is seen not only as a way of promoting public sector innovation but also as a means by which government can facilitate private sector innovation.[27]

The federal government's response to the *Venturous Australia* recommendations, contained in the White Paper, *Powering Ideas: An Innovation Agenda for the 21st Century,*[28] released as part of the May 2009 Budget process, is generally supportive of its recommendations on access to PSI. *Powering Ideas* accepted the need to build on initiatives already commenced by agencies including the Australian Bureau of Statistics, the Bureau of Meteorology and Geoscience Australia and "to develop a more coordinated approach to Commonwealth information management, innovation and engagement".[29] A similar approach was taken by the Victorian Parliament's Economic Development and Infrastructure Committee (EDIC) on the *Inquiry into Improving Access to Victorian Public Sector Information and Data,* tabled in parliament on 24 June 2009.[30] The 46 recommendations of the Victorian Parliament's EDIC include that the Victorian government should publicly endorse open access as the default position for the management of its PSI,[31] develop a whole-of-government information management framework (IMF),[32] adopt Creative Commons

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http://www.dbcde.gov.au/communications_for_business/Digital_Economy_Development/digital_economy_consultation accessed 22 May 2009.

[25] Ibid, p 3. Responses received by government during this consultation process informed the White Paper, *Powering Ideas: An Innovation Agenda for the 21st Century*, its response to the Venturous Australia Green Paper. See the Submission of the Intellectual Property: Knowledge, Culture and Economy (IP: KCE) Research Program, Queensland University of Technology (QUT) to the Department of Broadband, Communications and Digital Economy's *Digital Economy Future Directions* consultation paper, prepared by Brian Fitzgerald, Anne Fitzgerald, Jessica Coates and Kylie Pappalardo, 4 March 2009, p 2, available at http://www.dbcde.gov.au/digital_economy/digital_economy_consultation/submissions (under "Queensland University of Technology QUT Law Faculty) at 10 June 2009.

[26] *Australia's Digital Economy: Future Directions,* Department of Broadband, Communications and the Digital Economy, July 2009 at p 12, available at http://www.dbcde.gov.au/?a=117295.

[27] Ibid, p 11.

[28] *Powering Ideas: An Innovation Agenda for the 21st Century*, Department of Innovation, Industry, Science and Research, 12 May 2009, Chapter 6 (Public Sector Innovation), available at http://www.innovation.gov.au/innovationreview/Documents/PoweringIdeas_fullreport.pdf, accessed 14 July 2009.

[29] Ibid, p57.

[30] Victorian Parliament, Economic Development and Infrastructure Committee, *Inquiry into Improving Access to Victorian Public Sector Information and Data*, 27 June 2009, available at http://www.parliament.vic.gov.au/edic/inquiries/access_to_PSI/final_report.html. Note in particular submissions by the Australian Bureau of Statistics at http://www.parliament.vic.gov.au/edic/inquiries/access_to_PSI/submissions/PSI_Sub_63_ABS.pdf, Bureau of Meteorology at http://www.parliament.vic.gov.au/edic/inquiries/access_to_PSI/submissions/PSI_Sub_17_Bureau_Meteorology.pdf, QUT Law Faculty at http://www.parliament.vic.gov.au/edic/inquiries/access_to_PSI/submissions/PSI_Sub_38_QUT_Law_Faculty.pdf, and transcripts of presentations by Professor A Fitzgerald at http://www.parliament.vic.gov.au/edic/inquiries/access_to_PSI/transcripts/EDIC_080812_A_Fitzgerald.pdf and Dr Terry Cutler at http://www.parliament.vic.gov.au/edic/inquiries/access_to_PSI/transcripts/EDIC_300908_Cutler_&_Co.pdf.

[31] Ibid, Recommendation 1.

[32] Ibid, Recommendation 2.

licensing as the default licensing system for the IMF[33] and develop specific guidelines for the pricing of PSI, emphasising no or marginal cost provision wherever possible.[34]

Speeches by senior federal government Ministers in early 2009 expressly supported the introduction of reforms aimed at providing greater access to government information, through improvements to freedom of information ("FOI") regimes and moving from the traditional "pull" model inherent in FOI laws to a "push" model in which government proactively releases information in accordance with an established information publication scheme, rather than reactively in response to specific requests.   Important speeches signalling the shift in thinking at the federal level were delivered in early 2009 by Senator John Faulkner, (then) Special Minister of State, announcing the overhaul of the federal Freedom of Information Act and the creation of the Office of the Information Commissioner[35] and Lindsay Tanner MP, Minister for Finance and Deregulation at the CeBIT Conference, discussing how web 2.0 technologies enable "the nature of the dialogue between Government and the wider community to be completely transformed".[36] To advance work in these areas, in June 2009, the federal government appointed the Government 2.0 Taskforce to work with it to identify policies and frameworks to make PSI more readily accessible and usable and to encourage online engagement between government and citizens.[37]   The federal government and several State governments have taken steps to reform the administrative arrangements for access to PSI, through the creation of Information Commissioner positions and the introduction of legal frameworks supporting a "right to information".[38]

Whilst these steps by the federal and state governments are significant, they are very recent developments. For many years until recently, Australia was largely disengaged from the developments in theory and practice evident in the US, EU and international organisations from the mid 1990s. With some notable exceptions,[39] there has until recently been little evidence of an awareness or appreciation of the steps being taken elsewhere. For reasons which have yet to be fully understood, Australia largely failed to engage with developments in the formulation of policies and principles for access to PSI that took place at the national (UK, US, NZ), regional (EU) and the international levels (UNESCO, OECD) over the last decade. At the international level in particular, the Australian government appears not to have played a significant role (via participation in working groups) formed by a range of international organisations (notably UNESCO, OECD and

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[33] Ibid, Recommendation 15.

[34] Ibid, Recommendation 16.

[35] *Open and Transparent Government – the Way Forward*, delivered on 24 May 2009, at the Australia's Right To Know Freedom of Speech Conference, Sydney, available at http://www.smos.gov.au/speeches/2009/sp_20090324.html accessed on 11 June 2009. See also *Powering Ideas: An Innovation Agenda for the 21st Century*, Chapter 6 (Public Sector Innovation) at p58, available at http://www.innovation.gov.au/innovationreview/Pages/home.aspx accessed on 22 May 2009.

[36] Delivered on 13 May 2009 at the e-Government Forum held as part of the CeBIT conference, available at http://www.financeminister.gov.au/speeches/2009/sp_20090513.html

[37] See http://gov2.net.au . In July 2009, the Government 2.0 Taskforce released for comments an Issues Paper, *Towards Government 2.0,* available at http://gov2.net.au/consultation/2009/07/17/towards-government-2-0-an-issues-paper/, accessed 19 July 2009.

[38] Queensland was the first State to enact legislation, in the form of the *Right to Information Act* 2009 and the *Information Privacy Act* 2009 and accompanying regulations, which came into force on 1 July 2009, see http://www.oic.qld.gov.au/legislation and http://www.rti.qld.gov.au/rti/the_information_commissioner.asp .   The Queensland government has also published a *Statement of Right to Information Principles for the Queensland Public Service*, see http://www.rti.qld.gov.au/downloads/Right%20to%20Information%20Principles.pdf.

[39] See for example, *Unlocking the Potential: Digital Content Industry Action Agenda*, Strategic Industry Leaders Group report to the Australian Government, November 2005 at http://www.dbcde.gov.au/__data/assets/pdf_file/0006/37356/06030055_REPORT.pdf accessed on 22 May 2009.

ICSU/CODATA) to advance the policy framework for access to PSI. (Australia only rejoined CODATA, one of the leading international organisations concerned with science data, in 2008 after our membership lapsed many years earlier.)

The issue of access to and reuse of government information and data has been considered by various government agencies and in reports commissioned by governments over the last 15 years. The National Library of Australia was one of the first federal Government agencies to realise – by the mid 1990s - the potential of the emerging internet to provide enhanced citizen access to government information in digital format.[40] The landmark 1994 report, *Commerce in Content: Building Australia's International Future in Interactive Multimedia Markets*, commissioned from Cutler & Company by the federal government[41] made several recommendations as to how governments, at both federal and state level, could leverage off the cultural and content materials they created, owned or used, in order to accelerate the development of the then emerging digital content sector.[42] The recommendations included providing easy access to culturally significant data in digital form, as well as providing comprehensive access to nationally significant data, and promoting the development of standards for document and image digitalisation and archiving. Contemporaneously, the Australian Science and Technology Council's (ASTC) 1994 report, *The Networked Nation*, proposed that government should stimulate public interest in, and facilitate access to, government information via electronic networks. ASTEC noted the need for a coordinated approach by government and recommended the establishment of a Commonwealth Government Information Services Task Force to provide this coordination, to develop pilot programs, to investigate options for extending community access to networked information, and to develop a directory of government information publicly available over networks. In 2006, the Prime Minister's Science, Engineering and Innovation Council (PMSEIC) in its report, *From Data to Wisdom: Pathways to Successful Data Management for Australian Science*,[43] recommended that "Australia's government, science, research and business communities establish a nationally supported long-term strategic framework for scientific data management, including guiding principles, policies, best practices and infrastructure"[44] and the adoption of "mechanisms to enable the discovery of, and access to, data and information resources".[45]

Opportunities arose on several occasions up to the mid-2000s to examine the question of access to PSI, but they were either not recognised as such or were not acted upon. The Copyright Law Review Committee's review of Crown copyright in 2005 – 2006, which was established to address concerns about governments' anti-competitive licensing of PSI, provided an opportunity to consider not only the subsistence and exercise of copyright in public sector materials but also to engage with

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[40] Tony Barry, *Caught in a Web – Australian Government network policy*, paper presented at AUUG '95 and Asia-Pacific World Wide Web '95 Conference, available at http://www.csu.edu.au/special/conference/apwww95/papers95/tbarry/tbarry.html, accessed 1 September 2008.

[41] The report was commissioned by the Commonwealth Department of Industry, Science and Technology, CSIRO and the Broadband Services Expert Group.

[42] Cutler & Company, *Commerce in Content: Building Australia's International Future in Interactive Multimedia Markets*, A report for the Department of Industry Science and Technology, CSIRO, and the Broadband Services Expert Group, 1994, Part 8: The role and contribution of government, available at http://www.nla.gov.au/misc/cutler/cutler8.html at 16 July 2008.

[43] Prime Minister's Science, Engineering and Innovation Council, Working Group on Data for Science, *From Data to Wisdom: Pathways to Successful Data Management for Australian Science*, (2006) http://www.dest.gov.au/sectors/science_innovation/publications_resources/profiles/Presentation_Data_for_Science.htm; see also http://pandora.nla.gov.au/tep/75221.

[44] Recommendation 1.

[45] Recommendation 6.

the broader policy issues about access to and reuse of PSI. Unfortunately, the CLRC failed to contextualise its inquiry and recommendations within the framework of international developments and concepts about access to and reuse of government information and data.[46] Developments that have occurred in overseas jurisdictions in establishing systems for access to environmental information[47] have gone almost entirely unremarked upon in Australia and there is no current discussion of their relevance or significance domestically.

In the absence of a general national or inter-governmental policy, activities in Australia relating to information access and reuse have been largely focused on two key areas: spatial data and publicly funded research outputs (whether in the form of publications or data). Much of the impetus for access to PSI has come from the spatial information sector,[48] in the context of longstanding efforts to establish spatial data infrastructures (SDIs) at the national and state levels.[49] The spatial information industry has long been a proponent of the view "that government held information, and in particular spatial information, will play an absolutely critical role in increasing the innovative capacity of this nation."[50] In fact, the most advanced data access and reuse policy developed in Australia to date – and only one ever intended to apply Australia-wide at the federal level - is the *Spatial Data Access and Pricing Policy*[51] (known as the OSDM Policy) adopted by the

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[46] A good analysis of the CLRC's inquiry is found in Professor G Greenleaf's submission (no. 504(R)) to the Review of the National Innovation System, at pp. 70 – 71, available at http://www.innovation.gov.au/innovationreview/Documents/504(R)-Graham_Greenleaf.pdf, accessed 14 July 2009. Professor Greenleaf refers to the CLRC's Crown copyright review as "anaemic". He comments: "The CLRC's terms of reference were extremely broad, and included an explicit requirement for it to consider the rationale for government ownership of copyright material. Despite this, the CLRC does not seem to have seriously considered (or given reasons for rejecting) any of the alternative ways by which more substantial changes could be made to put Crown materials in the public domain. …. In effect, there has not yet been a comprehensive consideration of how a public sector public domain in Australia could stimulate innovation – quite clearly recognized in the European Union directive - and serve the public interest in other ways. The CLRC's report was a missed opportunity rather than a reason to accept the Crown copyright status quo."

[47] Such as environmental information reporting obligations under the Aarhus Convention (Convention on Access to Information, Public Participation and Decision Making, and Access to Justice in Environmental Matters, Aarhus, Denmark, 25 June 1998) or the EU Directive on access to environmental information European Directive 2003/4/EC on public access to environmental information.

[48] Much of the focus of the spatial industry has been on the development of spatial data infrastructures at the national and state levels. See generally S Jacoby, S Smith, L Ting, and I Williamson, *Developing a Common Spatial Data Infrastructure between State and Local Government - An Australian case study*, International Journal of Geographical Information Science, vol. 16, no. 4, pp 305-322; B Thompson, T Chan, R Slee, P Kinne, A Jahshan, P Woodgate, I Bishop and D McKenzie, *Virtual Australia: its key elements – know, think, communicate*, International Journal of Digital Earth, vol. 1, issue 1, January 2008 at pp 66-87, available at http://www.informaworld.com/smpp/content~content=a790360558~db=all~order=page. See also K McDougall, *Unlocking The Potential of Spatial Information Through Data Sharing – It's A Two Way Street*, Queensland Spatial Conference 2008, 17-19 July 2008, Gold Coast; M Warnest, K McDougall, A Rajabifard and I Williamson, *Local and state-based collaboration: the key to unlocking the potential of SDI*, Centre for Spatial Data Infrastructures and Land Administration, Spatial Sciences 2003; and A Rajabifard, A Binns and I Williamson, *Creating an Enabling Platform for the Delivery of Spatial Information*, Proceedings of SSC 2005 Spatial Intelligence, Innovation and Praxis: The national biennial Conference of the Spatial Sciences Institute, September 2005, Melbourne, Spatial Sciences Institute.

[49] See I Williams, T Chan and W Effenberg, *Development of Spatial Data Infrastructures - Lessons Learnt From The Australian Digital Cadastral Databases*, (1998) GEOMATICA 52(2), 177-187.

[50] Submission to Review of the National Innovation System, submission no. 307, Australian Spatial Consortium, at p. 2, available at http://www.innovation.gov.au/innovationreview/Documents/307-Australian_Spatial_Consortium.pdf, accessed 14 July 2009.

[51] See Commonwealth Interdepartmental Committee on Spatial Data Access and Pricing, *A Proposal for a Commonwealth Spatial Data Access and Pricing Policy*, June 2001, at http://www-ext.osdm.gov.au/osdm/policy/accessPricing/SDAP.pdf accessed on 22 May 2009 and generally http://www.osdm.gov.au/OSDM/Policies+and+Guidelines/Spatial+Data+Access+and+Pricing/default.aspx accessed on

Commonwealth government in 2001. The OSDM Policy, which forms the basis of the free data download services offered by Commonwealth government agencies including Geoscience Australia,[52] was in line with developments in other jurisdictions (notably the United States and the United Kingdom) at the time it was formulated.

Various initiatives relating to publicly funded research results were developed within the Accessibility Framework for Publicly Funded Research established in 2004 as part of the *Backing Australia's Ability – Building Our Future through Science and Innovation* package.[53] The Accessibility Framework was designed to manage research information, outputs and infrastructure in order to enable them to be more readily discovered, accessed and shared. It aims to provide a regulatory environment that both enables and encourages the population of digital repositories in order to provide better access to information.[54] The Open Access to Knowledge (OAK) Law and Legal Framework for e-Research projects established as part of the Research Information Infrastructure Framework for Australian Higher Education under *Backing Australia's Ability* dealt extensively with the legal issues involved in managing open access publication of research papers and data so as to enable access and reuse.[55] Several universities (including QUT)[56] have introduced open access policies for academic publications and, in December 2006, the two major Australian public research funding bodies – the Australian Research Council (ARC) and the National Health and Medical Research Council (NHMRC) – announced the introduction of open access guidelines for published papers and data resulting from funded research projects, effective 2008.[57] Both policies encourage researchers to:

> Consider the benefits of depositing their data and any publications arising from a research project in an appropriate subject and/or institutional repository [because in order to] maximise the benefits from research,

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22 May 2009.

[52] See https://www.ga.gov.au/products/servlet/controller?event=DEFINE_PRODUCTS.

[53] See http://www.dest.gov.au/sectors/research_sector/policies_issues_reviews/key_issues/accessibility_framework/ and http://backingaus.innovation.gov.au/ accessed on 24 April 2008.

[54] See http://www.dest.gov.au/sectors/research_sector/policies_issues_reviews/key_issues/accessibility_framework/

[55] See http://www.oaklaw.qut.edu.au and http://www.e-research.law.qut.edu.au/.

[56] See http://eprints.qut.edu.au/. In 2008, QUT amended clause 3.1.5 of its IP policy to ensure open access to scholarly works published by QUT academics – see http://www.mopp.qut.edu.au/D/D_03_01.jsp#D_03_01.05.mdoc. It states:

> "QUT assigns the right to publish scholarly works to the creator(s) of that work. The assignment is subject to a perpetual, irrevocable, worldwide, royalty-free, non-exclusive licence in favour of QUT to allow QUT to use that work for teaching, research and commercialisation purposes and to reproduce and communicate that work online for non-commercial purposes via QUT's open access digital repository.
>
> If required, QUT will sign documents to more fully record the staff member's ownership of the right of publication of the copyright in a scholarly work and QUT's non-exclusive licence to that work.
>
> The version of the scholarly work that QUT can make available via the digital repository may be the published version or the final post-peer review manuscript version. QUT will agree to third party publisher-requested embargoes of 12 months or less (from date of publication by the third party publisher) on the publication of the manuscript via the digital repository."

Open access requirements have also been adopted by the University of Tasmania (see http://eprints.utas.edu.au/) and Charles Sturt University (see http://bilby.unilinc.edu.au:8881/R?func=search&local_base=GEN01-CSU01) and are being considered at Macquarie University (see http://www.earlham.edu/~peters/fos/2008/07/macquarie-vc-preparing-to-propose-oa.html).

[57] Australian Research Council, Discovery Projects Funding Rules for funding commencing in 2008 http://www.arc.gov.au/pdf/DP08_FundingRules.pdf; National Health and Medical Research Council, Project Grants Funding Policy for grants commencing in 2008 http://www.nhmrc.gov.au/publications/_files/profundingpol.pdf. See also the ARC's response to the Productivity Council's draft research report on Public Support for Science and Innovation (2006), recommending that consideration be given to the funding of institutional open access repositories: Australian Research Council, Response to the Productivity Commission Draft Research Report – Public Support for Science and Innovation (2006) http://www.arc.gov.au/pdf/response_PCdraftresearchreport_06.pdf.

findings need to be disseminated as broadly as possible to allow access by other researchers and the wider community.[58]

At the State and Territory level there is a lack of consistency in policies on access to and reuse of government information and data. States and Territories have developed their own policies on information access and reuse and, in recent years some have also implemented policies on dealings with public sector intellectual property. There is a broadly held view that since public sector information has been produced through the expenditure of public funds, it should be made available to citizens and businesses.[59] However, while access is generally supported, there are differences in how this is achieved in practice and in the pricing models applying in the various jurisdictions.

There has been an ongoing tension in Australian governments (Federal, State and Territory) between, on the one hand, adopting an open access approach and, on the other hand, focusing on cost recovery or generating commercial returns or rents. This dichotomy was remarked upon by KPMG Consulting after comparing geospatial data policies and practices in its 2001 *Geospatial Data Policy Study Project Report* for GeoConnections Canada:

> Surprisingly, if the wording of the overarching national cost recovery policies in the United States and Australia are compared side by side without reference to the application of these policies, the policies seem very much alike. …. While the national data pricing policies in the USA and Australia are very similar in terms of the words used in the overarching policies, they are clearly different in both application, apparent intent, and result. The US agencies reporting data income had revenues equal to 2% of their expenses. The Australian agencies had revenues equal to over 30% of expenses. (The average Canadian agency is near the middle with about 13% of costs recovered.)
> ….
> Most of the data the US clients acquire is free (65% of the data), while most of the data acquired by Australian clients are at some form of market or cost recovery (75%). Differences in the two countries' federal cost recovery implementation and copyright legislation drives the disparity…… With generally free and open access to federal public domain data, US users are satisfied and feel major business opportunities result. Australian clients are less satisfied with the current geospatial data environment. Lack of a national geospatial data strategy in Australia and competition by government agencies in geomatic services that are available in the private sector are believed to be detrimental to the industry and economy as a whole.[60]

Gradually, over the last few years, things have begun to change, led by Australian government agencies including Geoscience Australia, the Australian Bureau of Statistics, the Bureau of Meteorology, the Education and Innovation & Industry Departments, the Australian Government Information Management Office (AGIMO) and the Prime Minister's Science, Engineering and Innovation Council (PMSEIC). Acceptance of the importance of developing the policy framework for access to PSI has been growing, while key federal government agencies have made significant changes to their information licensing practices. In November 2005, the Australian Bureau of Statistics (ABS) abandoned the restrictive licensing practices it had previously applied in licensing its datasets, which had involved charging fees for access to data and the restriction or prohibition of commercial downstream use by the licensee and/or others. Since then the ABS has eliminated virtually all charges for data and restrictions on downstream use of their data (that is, both access

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[58] Australian Research Council, *Discovery Projects Funding Rules for funding commencing in 2008*, [1.4.5.1] http://www.arc.gov.au/pdf/DP08_FundingRules.pdf; National Health and Medical Research Council, Project Grants Funding Policy for grants commencing in 2008, [16.2]. See http://www.nhmrc.gov.au/publications/_files/profundingpol.pdf.

[59] Rob Davies and Mary Rowlatt, *Report on the ePSINet Visit to Australia (9 – 15 May 2004)*, at p4.

[60] KPMG Consulting (Garry Sears), *Geospatial Data Policy Study Project Report – Executive Summary*, prepared for GeoConnections Policy Advisory Node, March 2001 at pp16-17, available at http://www.geoconnections.org/programsCommittees/proCom_policy/keyDocs/KPMG/KPMG_E.pdf,

and reuse), whether commercial or otherwise. [61] The Australian Bureau of Meteorology (BoM) is moving in the same direction, making water data available through the Australian Water Resources Information System (AWRIS) under Creative Commons licences.[62] Geoscience Australia offers free downloads of geospatial data from its website, based on the OSDM Policy.[63] Whilst initiatives such as these are important and provide evidence of a growing awareness of the importance of ensuring access to and reuse of PSI, they remain fragmented and separate and involve relatively few Government departments and agencies.[64]

One of the most influential projects in Australia in recent years has been the Government Information Licensing Framework Project (GILF Project).[65] It grew out of a project commissioned by the Queensland Spatial Information Council (QSIC) in 2006 to develop a legal framework to support the sharing and reuse of spatial and other information within and across the various levels of government and between government and the private sector. The focus of the GILF project was the development of a licensing model to be applied to PSI, the objective being new standardised information licensing arrangements which could be recommended for use with all kinds of Queensland government information to enable enhanced, on-demand access to PSI.[66] Importantly, the GILF project did not directly address information policy *per se*. However, by focusing attention on removing impediments to accessing PSI caused by inadequate or inappropriate licensing practices, its findings and recommendations about the use of Creative Commons licences on PSI directly influenced the reviews of information access policies by the federal government,[67] other State governments[68] and the New Zealand Government.[69]

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[61] Siu-Ming Tam, *Informing the Nation – Open Access to Statistical Information in Australia,* Statistical Journal of the IAOS: Journal of the International Association for Official Statistics (IAOS), Vol.25, No.3-4, pp 145-153, 2008, available at http://iospress.metapress.com/content/06h2q22084lp1v31/?p=5c06202d5bdd43d7921a2dd63cb08714&pi=7. The paper is also available at http://www.unece.org/stats/documents/ece/ces/ge.45/2009/wp.11.e.pdf and the presentation slides can be downloaded at http://www.unece.org/stats/documents/ece/ces/ge.45/2009/wp.11.e.ppt.

[62] Jurisdictional Reference Group on Water Information (JRGWI), Australian Bureau of Meteorology, *Item 7: Creative Commons Licensing*, Meeting 6, Melbourne, 23-24 July 2009. BoM intends to post this document to its website later this year. See http://www.bom.gov.au.

[63] See https://www.ga.gov.au/products/servlet/controller?event=DEFINE_PRODUCTS accessed on 22 May 2009.

[64] Among the most prominent are Geoscience Australia, Australian Bureau of Statistics, the Department of Education (DEWWR), the Department of Innovation, Industry, Science and Research (DIISR) and AGIMO.

[65] See the GILF project website at http://gilf.gov.au.

[66] Queensland Government, Queensland Spatial Information Council, *Government Information and Open Content Licensing: An access and use strategy (Government Information Licensing Framework Project Stage 2 Report)* (October 2006). The GILF standard licences consist of the Creative Commons licences and a template Restrictive Licence. See http://www.qsic.qld.gov.au/qsic/QSIC.nsf/CPByUNID/BFDC06236FADB6814A25727B0013C7EE accessed 22 May 2009. See also the GILF website at http://www.gilf.gov.au for further details, including access to an online interactive licensing tool designed to enable licences to be selected from the GILF standard suite of licences. There are six Creative Commons licences as well as a template Restrictive Licence for PSI which is subject to restrictions such as privacy, confidentiality or statutory constraints.

[67] See *Venturous Australia – Building Strength in Innovation*, Review of the National Innovation System, Report for the Australian Government Department of Innovation, Industry, Science and Research, September 2008. It recommended (recommendation 7.8) that PSI "should be released under a creative commons licence". Available at http://www.innovation.gov.au/innovationreview/Pages/home.aspx accessed on 11 June 2009.

[68] The Victorian Parliament, Economic Development and Infrastructure Committee, in its report, *Inquiry into Improving Access to Victorian Public Sector Information and Data,* (27 June 2009), recommended that the Victorian government should adopt Creative Commons licensing as the default licensing system for PSI (recommendation 15); see http://www.parliament.vic.gov.au/edic/inquiries/access_to_PSI/final_report.html.

[69] On 1 July 2009, the Ministry for the Environment (Manatū Mō Te Taiao) announced that it was making two important environmental databases - the Land Cover Database (LCD) and Land Environments New Zealand (LENZ) classification - available online, for free and licensed under an unrestricted Creative Commons licence (CC-BY). See

At the federal government level, the GILF project also served as a catalyst for renewed effort on the development of a national information framework when it was adopted by the Ministerial Online and Communications Council (OCC) in 2007. The need for a coordinated national approach to information access and reuse was acknowledged in the proposal for a National Information Sharing Strategy (NISS) which was approved by Commonwealth, State and Territory Ministers at the June 2007 meeting of the OCC. The proposal (later renamed the National Government Information Sharing Strategy (NGISS)) and carried forward by the Australian Government Information Management Office (AGIMO), envisaged the development of a standardised approach to information sharing to support the delivery of government services, for use by all portfolio areas at all levels of government.[70]

It should be noted that there are numerous specific legislative provisions and rules governing rights of access to and reuse of the broad range of digital copyright materials held by libraries and archives.[71] While such regulatory provisions are of relevance, they are not the immediate focus of this study, which is concerned primarily with policies and principles governing access to and reuse of materials produced by governments or with public sector funding.

New Zealand

By contrast with Australia, New Zealand has developed a comprehensive information strategy at the national level, which encompasses sector-specific strategies for digital content,[72] e-government services[73] and geospatial information.[74] Ongoing work has been done on the development of whole-of-government policies and practices for PSI since the NZ Cabinet approved the *Policy Framework for New Zealand Government-held Information* (the Policy Framework) in 1997.[75] The Policy Framework, developed by the New Zealand Public Service chief executives and State Services

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Land Information New Zealand in consultation with the State Services Commission and others, *Understanding our Geographic Information Landscape: A New Zealand Geospatial Strategy,* (January 2007) available at www.geospatial.govt.nz/assets/Geospatial-Strategy/nz-geospatial-strategy-2007.pdf.

[70] On these developments, see Ian Reinecke, *Information Policy and E-Governance in the Australian Government: Report: A report for the Department of Prime Minister and Cabinet*, March 2009 (updated to 31 July 2009), at pp13-15, available at http://www.dpmc.gov.au/publications/information_policy/index.cfm , accessed 4 September 2009.

[71] Such provisions are found in the *Copyright Act 1968* and the various public records and archives legislation, such as the *Archives Act 1983* (Cth) and the *Public Records Act 2002* (Qld). For an analysis of access rights to digital materials held by libraries see Andrew Kenyon and Emily Hudson, *Without Walls: Copyright Law and Digital Collections in Australian Cultural Institutions,* Script-Ed Volume 4, Issue 2, June 2007. This article uses recent experience in Australia to discuss copyright's impact on digitisation, and to explain why and how copyright has influenced the cultural institution "without walls". It also describes recent amendments to Australian copyright law – in particular, introduction of a flexible exception for some activities by cultural institutions. This may represent an important development in Australia, and offers a relevant case study internationally, for addressing copyright issues about digital access.

[72] National Library of New Zealand, *Creating a Digital New Zealand: New Zealand's Digital Content Strategy*, August 2007, available at http://www.digitalstrategy.govt.nz/upload/Main%20Sections/Content/NATLIBDigitalContentStrategy.pdf.

[73] See generally at http://www.e.govt.nz/about-egovt and New Zealand State Services Commission (2006) *Enabling Transformation: A strategy for e-government 2006*, available at http://www.e.govt.nz/about-egovt/strategy/strategy-nov-06.pdf.

[74] Land Information New Zealand in consultation with the State Services Commission and others, *Understanding our Geographic Information Landscape: A New Zealand Geospatial Strategy*, (January 2007) available at http://www.geospatial.govt.nz/assets/Geospatial-Strategy/nz-geospatial-strategy-2007.pdf.

[75] See *Policy framework for New Zealand Government-held information* website at http://www.ssc.govt.nz/display/document.asp?DocID=4880 accessed on 11 June 2009.

Commission,[76] adopted the position that government-held information should be made as accessible as possible, with barriers to access removed. It sought to balance the ease of access with security and the need to withhold certain types of information (notably personal information). The Policy Framework enunciated 11 principles which provide general guidance on matters including: availability, coverage, pricing, ownership, stewardship, collection, copyright, preservation, quality, integrity and privacy.[77]

The *Digital Strategy*[78] was first released in 2005 with the aim of creating a digital future for all New Zealanders, acknowledging that the information accessed through digital technologies can promote innovation, increase productivity and enrich the quality of the lives of New Zealanders. The strategy established the goal of unlocking the nation's "stock of content and provide all New Zealanders with seamless, easy access to the information that is important to their lives, businesses and cultural identity."[79] It saw the unlocking of repositories of information (whether historical or new) as adding to the nation's wealth of knowledge and creating a major new resource for education, cultural development and innovation. A revised version of the *Digital Strategy*, *Digital Strategy 2.0*, released in 2008, contains strong statements about reuse of public sector information, committing government to making public information accessible to everyone in a way that people want it, when they want it. Government is to provide secure personalised interaction between government and individuals, and open up authoritative data sources also while protecting privacy and the security of information.

The New Zealand *Geospatial Strategy*, launched in 2007, is designed to improve knowledge of, and access to, the geospatial assets owned, maintained or used by government.[80] On 1 July 2009, the Ministry for the Environment (Manatū Mō Te Taiao) announced that it was making two important environmental databases - the Land Cover Database (LCD) and Land Environments New Zealand (LENZ) classification - available online, for free and licensed under an unrestricted Creative Commons licence.[81] Both of these databases are widely used by government agencies in environmental and resource management planning. Making them available under an open content licence will enable members of the public to freely share and distribute the environmental data and information they contain without having to seek permission for reuse.[82]

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[76] Ibid.

[77] The 1997 Policy Framework has been under reviewed in 2008 and 2009. In August 2009, the New Zealand government released for comment the draft New Zealand Government Open Access and Licensing Framework (NZGOAL), available at http://www.e.govt.nz/policy/information-data/nzgoalframework.html, accessed 27 August 2009. See also Keitha Booth, *Draft Open Access and Licensing Framework released,* "In Development" website, New Zealand State Services Commission, 27 August 2009 at http://blog.e.govt.nz/index.php/2009/08/27/draft-open-access-and-licensing-framework-released, accessed 27 August 2009.

[78] See the *Digital Strategy* website at http://www.digitalstrategy.govt.nz/.

[79] New Zealand Government, *Digital Strategy: Creating Our Digital Future*, May 2005, p11, available at http://www.digitalstrategy.govt.nz/upload/documents/MED11706_Digital%20Strategy.pdf.

[80] Land Information New Zealand in consultation with the State Services Commission and others, Understanding our Geographic Information Landscape: A New Zealand Geospatial Strategy, (January 2007) available at www.geospatial.govt.nz/assets/Geospatial-Strategy/nz-geospatial-strategy-2007.pdf.

[81] The databases are licensed under a Creative Commons Attribution (CC-BY) licence. See the Ministry for the Environment New Zealand website at http://www.mfe.govt.nz and http://www.mfe.govt.nz/issues/land/land-cover-dbase/index.html accessed on 3 July 2009.

[82] The Land Cover Database and Land Environments New Zealand are now available online at http://www.koordinates.com, a New Zealand company.

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International

There have been significant international initiatives especially over the past decade which show how the drive to promote better access to PSI and the freer flow globally of information and knowledge produced through publicly funded research, has increased with the realisation of the full magnitude of the environmental, social and economic issues confronting humankind. It is in this challenging global context that there appears to be an increasing realisation by the international community that greater international cooperation, a significant part of which needs to be based on clearly articulated policies and principles on access to and reuse of PSI, is essential if these challenges are to be met effectively.

The United Nations (UN) and its specialised agencies have issued numerous official resolutions, declarations and reports addressing the development of policies on access to and reuse of government information.[83] The importance of scientific research and open access to information relating to the environment is recognised in two of the key documents negotiated at the United Nations Conference on Environment and Development (the Earth Summit) in 1992, the Rio Declaration on Environment and Development[84] and the United Nations Framework Convention on Climate Change. (UNFCCC).[85] Principle 9 of the Rio Declaration requires states to cooperate to strengthen their capacity for sustainable development "by improving scientific understanding through exchanges of scientific and technological knowledge" while Principle 10 requires, at the national level, that "each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision making". The UNFCCC commits parties to the Convention to promote and cooperate "in scientific, technological, technical, socio-economic and other research, systematic observation and development of data archives related to the climate system"[86] as well as to "the full, open and prompt exchange of relevant scientific, technological, technical, socio-economic and legal information related to the climate system and climate change, and to the economic and social consequences of various response strategies".[87] These commitments were expanded upon by a decision at the Conference of the Parties in 1998 which recognised the importance of national contributions to global climate observing systems.[88] It urges parties to "undertake free and unrestricted exchange of data to meet the needs of the Convention, recognising the various policies on data exchange of relevant international and intergovernmental organisations"

During the 1990s, the United Nations Educational, Scientific and Cultural Organisation (UNESCO) played an important role in further developing policies and guidelines on access to PSI. The

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[83] Paul Uhlir, *Policy Guidelines for the Development and Promotion of Governmental Public Domain Information*, UNESCO, Paris, 2004, p 1.

[84] Rio Declaration on Environment and Development, United Nations General Assembly, United Nations Conference on Environment and Development, 12 August 1992, United Nations document no. A/CONF.151/26 (Vol.I), available at available at http://www.un.org/documents/ga/conf151/aconf15126-1annex1.htm.

[85] United Nations Framework Convention on Climate Change, United Nations, 1992, United Nations document no. FCCC/INFORMAL/84, GE.05-62220 (E) 200705, available at http://unfccc.int/resource/docs/convkp/conveng.pdf. Australia signed the UNFCC on 4 June 1992 and ratified it on 30 December 1992. The UNFCC came into force on 21 March 1994.

[86] Ibid. Article 4.1(g)

[87] Ibid. Article 4.1(h)

[88] Research and systematic observation – Recommendation of the Subsidiary Body for Scientific and Technological Advice, UNFCCC, Conference of the Parties, Buenos Aires, November 1998, FCCC/CP/1998/L.4, available at http://unfcc.int/cop4/.

growing awareness of the importance of access to information is particularly apparent in the recent work of intergovernmental bodies such as the Organisation for Economic Cooperation and Development (OECD) and the International Council for Science (ICSU). UNESCO's work from the late 1990s on made an important contribution to the development of PSI access policies at the international level and fed into the more recent work of other bodies such as the OECD, the World Summit on the Information Society (WSIS) and the Internet Governance Forum (IGF). One of the most useful guides to developing a national information policy is the report, Policy Guidelines for the Development and Promotion of Governmental Public Domain Information, which was commissioned by UNESCO from Paul Uhlir of the US National Academy of Sciences in 2004.[89]

During the last decade, the OECD[90] (through its Directorate for Science, Technology and Policy)[91] has examined the social and economic implications of the development and use of information and communication technologies, the internet and e-business. At the Seoul Ministerial Meeting on the Future of the Internet Economy in 2008, the OECD Ministers endorsed the Seoul Declaration on the Future of the Internet Economy and supporting policy framework.[92] The Seoul Declaration incorporates key principles from the OECD's *Principles and Guidelines for Access to Research Data from Public Funding* and the *Recommendation of the Council for Enhanced Access and More Effective Use of Public Sector Information* and both of these documents form part of the supporting materials annexed to the Declaration.[93] They provide guidelines on the availability of research data, including openness, transparency, legal conformity, interoperability, quality, efficiency, accountability and sustainability. OECD Recommendations have the status of OECD legal instruments that describe standards or objectives which OECD member countries (such as Australia) are expected to implement, although they are not legally binding. However, through long-standing practice of member countries, a Recommendation is considered to have great moral force.[94] The relevance of the OECD guidelines to the Australian context was acknowledged by the Prime Minister's Science, Engineering and Innovation Council (PMSEIC) in its 2005 report *From Data to Wisdom: Pathways to Successful Data Management for Australian Science*, which recommended that they should be taken into account in the development of a strategic framework for management of research data in Australia.[95]

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[89] For details, see UNESCO at http://portal.unesco.org/ci/en/ev.php-URL_ID=15862&URL_DO=DO_TOPIC&URL_SECTION=201.html.

[90] The OECD is a group of 30 member countries (including Australia) which aim to facilitate and promote good governance. See http://www.oecd.org/pages/0,3417,en_36734052_36734103_1_1_1_1_1,00.html accessed on 22 May 2009.

[91] See http://www.oecd.org/department/0,3355,en_2649_33703_1_1_1_1_1,00.html accessed on 22 May 2009.

[92] OECD, *The Seoul Declaration for the Future of the Internet Economy and the shaping policies for the future of the internet economy* (2008), noting in particular the annexes including the *Recommendation concerning Access to Research Data from Public Funding* and the *Recommendation for Enhanced Access and More Effective Use of Public Sector Information*, available at http://www.oecd.org/site/0,3407,en_21571361_38415463_1_1_1_1_1,00.html.

[93] See OECD, Shaping Policies for the Future of the Internet Economy, Annexes, available at http://www.oecd.org/dataoecd/1/28/40821729.pdf. The Principles and Guidelines for Access to Research Data from Public Funding is Annex D; and the Recommendation of the Council for Enhanced Access and More Effective Use of Public Sector Information is Annex F.

[94] See the Submission of the Intellectual Property: Knowledge, Culture and Economy (IP: KCE) Research Program, Queensland University of Technology (QUT) to the Department of Broadband, Communications and Digital Economy's *Digital Economy: Future Directions* consultation paper, prepared by Brian Fitzgerald, Anne Fitzgerald, Jessica Coates and Kylie Pappalardo, 4 March 2009, p11, available at http://www.dbcde.gov.au/digital_economy/digital_economy_consultation/submissions (under "Queensland University of Technology QUT Law Faculty) at 10 June 2009.

[95] Prime Minister's Science, Engineering and Innovation Council (PMSEIC) Working Group on Data for Science, *From Data to Wisdom: Pathways to Successful Data Management for Australian Science*, December 2006, Recommendation

As well as the principles contained in declarations by UN agencies and inter-governmental organisations, statements of principle on open access to publicly funded research data and academic publications are found in numerous declarations made by non-government organisations and groups operating at the international level.

There are numerous international policy statements that promote public availability and open exchange of data, including the Bermuda Principles (1996) and the Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities (2003).[96] The Bermuda Principles were developed by scientists involved in the International Human Genome Sequencing Consortium and their funding agencies, and represented an agreement among researchers about the need to establish a basis for the rapid and open sharing of pre-publication data on gene sequences.[97] The Bermuda Principles required automatic release of sequence assemblies larger than 1kb and immediate publication of finished annotated sequences. They sought to make the entire gene sequence freely available to the public for research and development in order to maximise benefits to society. The Berlin Declaration had the goal of supporting the open access paradigm via the internet and promoting the internet as a fundamental instrument for a global scientific knowledge base.[98] The Berlin Declaration defined "open access contribution" to include scientific research results, raw data and metadata, and required open access contributions to be deposited in an online repository and made available under a "free, irrevocable, worldwide, right of access to, and a license to copy, use, distribute, transmit and display the work publicly and to make and distribute derivative works, in any digital medium for any responsible purpose, subject to proper attribution of authorship."[99]

Acknowledgement of the need for data access and sharing is invariably found, in express statements, in the framework documents of large-scale observational projects generating vast amounts of data about the earth, water, marine environment and the atmosphere. For more than 50 years, the foundation documents of major science collaborative projects have typically included, as a key principle, a commitment to ensuring that research outputs will be openly and freely available. Data and information sharing provisions are found in numerous international environmental treaties, including the Antarctic Treaty (1959), the Convention on the Law of the Sea, the Ozone Protocol, the Convention on Biodiversity and the Aarhus Convention (1998).[100] Article III of the Antarctic Treaty establishes the principle that scientific data will be "exchanged and made freely available":

> 1. In order to promote international cooperation in scientific investigation in Antarctica, as provided for in Article II of the present Treaty, the Contracting Parties agree that, to the greatest extent feasible and

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9, p 12, available at http://www.dest.gov.au/NR/rdonlyres/D15793B2-FEB9-41EE-B7E8-C6DB2E84E8C9/15103/From_Data_to_Wisdom_Pathways_data_man_forAust_scie.pdf and http://www.dest.gov.au/sectors/science_innovation/publications_resources/profiles/Presentation_Data_for_Science.htm.

[96] For more information, see Anne Fitzgerald and Kylie Pappalardo, *Building the Infrastructure for Data Access and Reuse in Collaborative Research: An Analysis of the Legal Context*, 2007, OAK Law Project and Legal Framework for e-Research Project, available at http://eprints.qut.edu.au/8865/.

[97] Bermuda Principles (1996) available at http://www.ornl.gov/sci/techresources/Human_Genome/research/bermuda.shtml as at 10 June 2009.

[98] Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities (2003) available at http://oa.mpg.de/openaccess-berlin/berlindeclaration.html at 10 June 2009.

[99] Ibid.

[100] *White Paper on the GEOSS Data Sharing Principles*, CODATA, Paris, September 2008, p10, available at http://www.earthobservations.org/documents/dsp/Draft%20White%20Paper%20for%20GEOSS%20Data%20Sharing%20Policies_27Sept08.pdf.

practicable: … (c) scientific observations and results from Antarctica shall be exchanged and made freely available.[101]

The need for coherence between data sharing principles that are at the heart of international scientific collaborations and the policy and legal frameworks in place in the disparate jurisdictions where researchers operate is highlighted by the Global Earth Observation System of Systems (GEOSS) initiated in 2005 by the Group on Earth Observations (GEO). [102] GEOSS seeks to connect the producers of environmental data and decision-support tools with the end users of these products, with the aim of enhancing the relevance of Earth observations to global issues. The end result is to be a global public infrastructure that generates comprehensive, near-real-time environmental data, information and analyses for a wide range of users. The vision for GEOSS is as a "system of systems", built upon existing observational systems and incorporating new systems for Earth observation and modelling that are offered as GEOSS components. This emerging public infrastructure links a diverse and growing array of instruments and systems for monitoring and forecasting changes in the global environment. This "system of systems" supports policymakers, resource managers, science researchers and many other experts and decision-makers.

One of GEO's earliest actions was to explicitly acknowledge the importance of data sharing in achieving its vision and to agree on a strategic set of data sharing principles for GEOSS:

1. There will be full and open exchange of data, metadata and products shared within GEOSS, recognising relevant international instruments, and national policies and legislation.

2. All shared data, metadata and products will be made available with minimum time delay and at minimum cost.

3. All shared data, metadata and products being free of charge or at no more than the cost of reproduction will be encouraged for research and education.[103]

Europe

Some of the most important initiatives on access to information generated by public sector entities are those which have been developed by the European Union (EU), in the form of Conventions and Directives binding on EU Member States.   An early example of co-operation at the European level is found in the Convention that established the European Organisation for Nuclear Research (CERN) in 1953.[104] The Convention, which establishes CERN's role in organising and sponsoring international cooperation in research, promoting contacts between scientists and interchange among laboratories and institutes[105] requires research results to be "made generally available":

[101] The Antarctic Treaty (1959) signed 1 December 1959; entry into force for Australia and generally: 23 June 1961 [1961] ATS 12 (Australian Treaty Series, 1961 No. 12) available at http://www.austlii.edu.au/cgi-bin/sinodisp/au/other/dfat/treaties/1961/12.html?query=antarctic accessed 5 June 2009.
[102] See the GEOSS home page at http://www.earthobservations.org/geoss.shtml and the Wikipedia entry at http://en.wikipedia.org/wiki/GEOSS.
[103] Group on Earth Observations (GEO), GEOSS 10 Year Implementation Plan, adopted 16 February 2005, p 4, http://www.earthobservations.org/docs/10-Year%20Implementation%20Plan.pdf.
[104] See http://public.web.cern.ch/public/en/About/About-en.html accessed 22 May 2009. The CERN Convention was established in July 1953 in the aftermath of the Second World War. CERN was officially established on 29 September 1954 on ratification by France and Germany, amongst the 12 founding Member States.
[105] CERN now connects and combines the IT power of more than 140 computer centres in 33 countries. At full capacity, the Large Hadron Collider (LHC), the world's largest particle accelerator, is expected to produce more than 15 million

> The Organization shall provide for collaboration among European States in nuclear research of a pure scientific and fundamental character (...). The Organization shall have no concern with work for military requirements and the results of its experimental and theoretical work shall be published or otherwise made generally available.[106]

Building on commitments in the Rio Declaration (1992)[107] and the United Nations Framework Convention on Climate Change (1992), detailed obligations to provide access to environmental information were introduced in the Aarhus Convention (1998) which grants rights to members of the public to obtain access to environmental information and to participate in decision-making about environmental matters.[108] In 2003 the European Parliament and Council adopted the Directive on Public Access to Environmental Information[109] which requires public authorities to provide timely access to environmental information.

Central to any consideration of access to PSI in Europe are the Directive on the re-use of public sector information[110] ("the PSI Directive"), adopted in 2003, and the Directive establishing an Infrastructure for Spatial Information[111] ("the INSPIRE Directive"), adopted in 2007.   In negotiating the PSI Directive, the European Parliament and Council of the European Union recognised that the public sector is the largest producer of information in Europe and that substantial social and economic benefits stood to be gained if this information were available for access and re-use.   However, it was considered that European content firms engaging in the aggregation of information resources into value-added information products would be at a competitive disadvantage unless there were clear policies or uniform practices on how PSI could be accessed and reused.   The lack of harmonisation of policies and practices regarding PSI was regarded as a barrier to the development of digital products and services based on information obtained from different countries. In response, the PSI Directive establishes a framework of rules governing the re-use of existing documents held by the public sector bodies of EU member states. The INSPIRE Directive (which EU member states were due to implement by May 2009) establishes EU policy and principles on spatial information held by or on behalf of public authorities, such as information about mapping of the land and sea, the weather, geology, the environment, population,

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Gigabytes of data each year. Hundreds of millions of subatomic particles will collide each second, presenting a massive data challenge.

[106] See http://public.web.cern.ch/public/en/About/Mission-en.html accessed 22 May 2009.

[107] Rio Declaration on Environment and Development, United Nations Conference on Environment and Development, 1992, available at http://www.unep.org/Documents.Multilingual/Default.asp?DocumentID=78&ArticleID=1163; UNEP is the United Nations Environment Program.

[108] Convention on Access to Information, Public Participation and Decision Making, and Access to Justice in Environmental Matters, Aarhus, Denmark, 25 June 1998, see http://www.unece.org/env/pp/documents/cep43e.pdf accessed on 22 May 2009. See FERN, Accessing Environmental Information In and From the European Community: a practical guide to your right to know, November 2007, available at http://www.fern.org/media/documents/document_4095_4108.pdf accessed on 22 May 2009.

[109] Directive 2003/4/EC of The European Parliament And Of The Council Of 28 January 2003 On Public Access To Environmental Information And Repealing Council Directive 90/313/EEC OJL 041 , 14/02/2003 P. 0026 – 0032. See http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32003L0004:EN:HTML accessed on 22 May 2009.

[110] Directive 2003/98/EC of the European Parliament and of the Council of 17 November 2003 on the re-use of the public sector information [2003] OJ L 345/90, available at http://www.epsiplatform.com/reports/european_directive_on_psi/directive_2003_98_ec and http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32003L0098:EN:HTML accessed on 22 May 2009.

[111] Directive 2007/2/EC of the European Parliament and the Council of 14 March 2007 establishing an Infrastructure for Spatial Information [2007] OJ L 108/1, 25 April 2007. The INSPIRE Directive entered into force on 15 May 2007, available at http://www.ec-gis.org/inspire/directive/l_10820070425en00010014.pdf and http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2007:108:0001:01:EN:HTML accessed on 22 May 2009.

housing and public utility services. Its purpose is to ensure that private and public sector bodies and citizens can gain access to this information and reuse it where appropriate, to develop new services and information resources.

Further, Communications of the European Commission in 2007 and 2008 address issues relevant to open access in relation to a broad range of information types including scientific and creative materials online. In the field of scientific information, the European Commission published a Communication on scientific information in the digital age: access, dissemination and preservation in 2007.[112] In January 2008, the European Commission published a Communication on creative content online in the single market, launching further actions to support the development of innovative business models and the deployment of cross-border delivery of diverse online creative content services.[113]

Certain key and frequently encountered issues emerge from the various European initiatives and the varied informational contexts and subject matters which they address. The key issues include the benefits to be derived from technological (ICT) compatibility and interoperability (with the related need for readily accessible innovative ICT tools to facilitate these objectives e.g. open source software and open ICT systems), the need for clearly articulated information management policies and principles, the economics of open access to PSI, and the need for cross border legal compatibility such as widely accepted and clearly expressed standard open content licences which indicate clearly what uses may be made of the information being accessed online and on an open access basis.

United Kingdom

The United Kingdom has established itself at the forefront of European Union member states in implementing initiatives to enable access to public sector materials. It took the lead in 2005 by transposing the PSI Directive into UK law[114] and establishing an effective administrative regime, central to which is the Office of Public Sector Information (OPSI).[115] From the mid-2000s, the UK government has demonstrated a broad commitment to the introduction of reforms to enable access to PSI, commissioning a series of important reports from which it has drawn guidance, including

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[112] Communication from the Commission to the European Parliament, the Council, and the European Economic and Social Committee on scientific information in the digital age: access, dissemination and preservation, COM(2007) 56 final, available at http://ec.europa.eu/research/science-society/document_library/pdf_06/communication-022007_en.pdf accessed on 22 May 2009.

[113] Communication from the Commission to the European Parliament, the Council, and the European Economic and Social Committee on creative content on-line in the single market, COM(2007) 836 final, available at http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52007DC0836:EN:NOT accessed on 22 May 2009. See generally http://ec.europa.eu/avpolicy/other_actions/content_online/index_en.htm accessed on 22 May 2009.

[114] The PSI Directive was given effect in UK law through the Re-use of PSI Regulations 2005 (S.I. 2005 No. 1515). The UK was one of 8 EU member states to implement the Directive by the nominated date of 1 July 2005.

[115] http://www.opsi.gov.uk. The UK has also established an Advisory Panel on Public Sector Information, http://www.appsi.gov.uk. See the 2008 and 2009 annual reviews of OPSI's activities: *Unlocking PSI Potential: The United Kingdom Report on the Re-use of Public Sector Information* (2008), Office of Public Sector Information, available at http://www.opsi.gov.uk/advice/psi-regulations/uk-report-reusepsi-2008.pdf and *The United Kingdom Report on the Re-use of Public Sector Information: unlocking PSI potential* (2009), Office of Public Sector Information at http://www.opsi.gov.uk/advice/psi-regulations/uk-report-reuse-psi-2009.pdf A timeline of the UK's implementation of the PSI Directive from mid-2005 to mid-2008 is available on the ePSI Platform website at http://www.epsiplatform.com/good_practice/uk_psi_timeline The UK has also established an Advisory Panel on Public Sector Information, http://www.appsi.gov.uk. .

the *Power of Information: an independent review* (2007),[116] the report on *Models of Public Sector Information Provision via Trading Trusts* ("the Cambridge Report")[117] and the *Power of Information Taskforce report* (2009).[118] Throughout these reports are findings and recommendations that support the introduction of fundamental reforms to longstanding policies and practices on access to and reuse of PSI, including those of the Ordnance Survey Office[119] and other trading trusts.[120] In the forum of public opinion, since 2006 the Guardian newspaper has run its influential *Free our Data* online campaign which serves to highlight perceived shortcomings in current access and pricing practices at the national and local government levels.[121]

The UK government's embrace of the interactive functionality of web 2.0 technologies to foster engagement with citizens and provide greater access to PSI closely parallels developments in the United States from early 2009 under the Obama administration.[122] An indication of the weight the UK government puts on the development of new models of public information delivery is found in the appointment in June 2009 of Sir Tim Berners-Lee, the inventor of the world wide web, as its expert advisor. Sir Tim will lead a panel of experts to advise the Minister for the Cabinet Office on how the UK government can best use the internet to make public data as widely available as possible.[123]

United States

The environment for access to government information in the United States is characterised by broad rights for citizens to obtain access to government information and re-use it for commercial purposes, a lack of restrictions on re-use, charges limited to the marginal costs of reproduction and dissemination, and the absence of copyright in materials produced by the federal government. The

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[116] Ed Mayo and Tom Steinberg, *The Power of Information: an independent review*, (June 2007), commissioned by the Cabinet Office, UK Government, available at http://www.opsi.gov.uk/advice/poi/index, http://www.cabinetoffice.gov.uk/newsroom/news_releases/2007/070607_power.aspx and http://www.cabinetoffice.gov.uk/reports/power_of_information.aspx.

[117] David Newbery, Lionel Bently and Rufus Pollock, *Models of Public Sector Information Provision via Trading Funds*, Cambridge University (26 February 2008), available at http://www.opsi.gov.uk/advice/poi/models-psi-via-trading-funds.pdf.

[118] *Power of Information Taskforce report*, Power of Information Taskforce, chaired by Richard Allan (February 2009), available at http://poit.cabinetoffice.gov.uk/poit/. See also the Power of Information Taskforce site at http://powerofinformation.wordpress.com/.

[119] In April 2009, the Ordnance Survey published a new Business Strategy with proposals for improvements in how it makes it data available, designed to provide "the best balance between making information more widely available and creating a sustainable future for Ordnance Survey and the wider market". See http://strategy.ordnancesurvey.co.uk/.

[120] See also *Digital Britain: the final report*, UK Government, Department for Culture, Media and Sport and Department for Business, Innovation and Skills, 16 June 2009, available at http://www.culture.gov.uk/what_we_do/broadcasting/6216.aspx. Note in particular, recommendation 79 at p 24.

[121] The Guardian's Free our Data website is at http://www.guardian.co.uk/technology/free-our-data See also the Free our Data blog at http://www.freeourdata.org.uk/blog/.

[122] See, for example, the report of the UK Cabinet Office Strategy Unit, *Power in People's Hands: Learning from the World's Best Public Services,* July 2009, available at http://www.cabinetoffice.gov.uk/strategy/publications/world-class-public-services.aspx accessed 18 July 2009. See Guardian article, 4 June 2009 at http://www.guardian.co.uk/technology/2009/jun/04/free-our-data

[123] See *Pioneer of the World Wide Web to advise the government on using data*, UK Cabinet Office, 10 June 2009, at http://www.cabinetoffice.gov.uk/newsroom/news_releases/2009/090610_web.aspx; *Web inventor to help Downing Street to free up government data*, Charles Arthur, The Guardian, 10 June 2009, at http://www.guardian.co.uk/technology/2009/jun/10/berners-lee-downing-street-web-open. See also, an article by Sir Tim Berners-Lee, *Putting Government Data Online,* at http://www.w3.org/DesignIssues/GovData.html , accessed 19 July 2009.

United States has a long history of support for public access to government information, with support for open access to government documents extending back to the era of the founding fathers. There has also been a long held commitment to the principle that scientific information and research results should, as far as possible, be shared broadly within the scientific community.[124] This strong support of the open access philosophy is based on a variety of factors – historical, governmental and cultural.

Two documents are central to the US legislative and policy framework underpinning access to and re-use of PSI. These are the US *Copyright Act* 1976 and the OMB Circular A-130. Under the Copyright Act works of the federal government are excluded from copyright protection.[125] While the absence of copyright to protect federal government agencies' information is one clear contributing factor it certainly is not the only one. Circular A-130, issued by the OMB in 2000 [126] establishes the data access and reuse policy framework for executive branch departments and agencies of the US federal government, is the US federal government's most significant policy statement on access to PSI. As well as acknowledging that government information is a valuable public resource and that the nation stands to benefit from the dissemination of government information, OMB Circular A-130 requires improperly restrictive practices to be avoided. Additionally, Circular A-16, entitled Coordination of Geographic Information and Related Spatial Data Activities, provides that US federal agencies have a responsibility to "[c]ollect, maintain, disseminate, and preserve spatial information such that the resulting data, information, or products can be readily shared with other federal agencies and non-federal users, and promote data integration between all sources."[127]

Open access remains a key point of interest in current US political and administrative discourse. In 2008, the US National Institutes of Health[128] (the largest funder of basic biomedical research in the world, spending US$27 billion in the 2005 financial year) and Harvard University faculties (the Law School[129] and the Faculty of Arts and Sciences)[130] introduced mandatory open access

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[124] See the National Security Decision Directive 189, National Policy on the Transfer of Scientific, Technical and Engineering Information, issued by the Reagan White House on 21 September 1986, which stated that "[i]t is the policy of this Administration that, to the maximum extent possible, the products of fundamental research remain unrestricted". The term "fundamental research" is defined as meaning "basic and applied research in science and engineering, the results of which ordinarily are published and shared broadly within the scientific community, as distinguished from proprietary research and from industrial development, design, production, and product utilization, the results of which ordinarily are restricted for proprietary or national security reasons." See http://www.fas.org/irp/offdocs/nsdd/nsdd-189.htm accessed on 22 May 2009.
[125] Section 105. Although s 105 of the US Copyright Act 1976 applies only to the federal government and does not prevent the states from asserting copyright in their materials, most states have adopted policies which encourage the sharing of government information among agencies or with the public.
[126] Office of Management and Budget, *Circular A-130 on Management of Federal Information Resources* (OMB Circular A-130) (2000) available at http://www.whitehouse.gov/omb/circulars/a130/a130trans4.pdf and http://www.whitehouse.gov/omb/circulars/a130/a130trans4.html.
[127] Office of Management and Budget, *Circular A-16 on the Coordination of Geographic Information and Related Spatial Data Activities* (OMB Circular A-16) (issued 16 January 1953, revised in 1967, 1990, 2002) Section 8, http://www.whitehouse.gov/omb/circulars_a016_rev/#8.
[128] See NIH's Revised Policy on Enhancing Public Access to Archived Publications Resulting from NIH-Funded Research, at http://grants.nih.gov/grants/guide/notice-files/NOT-OD-08-033.html accessed on 22 May 2009. NIH's mandatory open access policy has received legislative backing by the Consolidated Appropriations Act 2008 (Division G, Title II, Section 218 of Public Law 110-161); see NIH's Revised Policy on Enhancing Public Access to Archived Publications Resulting from NIH-Funded Research, at http://grants.nih.gov/grants/guide/notice-files/NOT-OD-08-033.html.
[129] See http://www.law.harvard.edu/news/2008/05/07_openaccess.php.
[130] Adopted 12 February 2008, see http://www.fas.harvard.edu/~secfas/February_2008_Agenda.pdf   and

publishing policies, requiring peer-reviewed journal publications to be made available in open access repository.[131]   President Obama came into office in 2009 with a technology policy aimed at creating "a transparent and connected democracy", including the use of technology "to reform government and improve the exchange of information between the federal government and citizens while ensuring the security of our networks".[132] On his first day in office President Obama issued a Presidential Memorandum on *Transparency and Open Government*, encouraging transparency in government and instructing US government agencies to err on the side of making information public.[133] As part of the Obama administration's Open Government Initiative,[134] the data.gov portal was launched in May 2009 providing access to large numbers of federal datasets.[135] For example, machine-readable datasets may be accessed from the "raw" data catalogue, in a variety of formats (including XML, CSV/TXT, KL/KMZ and Esri) with accompanying metadata and analysed using tools available on the portal.

Canada

Canada, like Australia, continues to recognise the existence of copyright in ("Crown copyright") in materials produced by the government.[136] While there have been initiatives designed to promote access to public sector materials in Canada in recent years (notably programs such as GeoBase and GeoGratis which provide free access to government spatial data), the Canadian situation is similar to that in Australia in that there is as yet no clearly established information policy or strategy operating at a national level. Unlike the United States, Canada has historically supported a higher level of private sector participation in the development, funding and maintenance of key spatial data infrastructure (SDI).[137] This is reflected in initiatives led by GeoConnections Canada, a national program headed by Natural Resources Canada which commenced in 1999. GeoConnections involves the federal, provincial (State), territory and municipal governments, and the private and academic sectors working in partnership with governments to develop the components of the Canadian Geospatial Data Infrastructure (CGDI).[138]

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http://www.eprints.org/openaccess/policysignup/fullinfo.php?inst=Harvard%20University%20Faculty%20of%20Arts%20and%20Sciences. In an important advance on previous practice, instead of requiring academic authors to deposit their publications in the institutional repository themselves (which requires individual academic authors to assume responsibility for negotiating copyright interests with their publishers) Harvard's Faculty of Arts and Sciences obtains a licence from faculty authors which allows Harvard to deposit and make available faculty authors' publications on their behalf. Importantly, the Faculty of Arts and Sciences' policy also provides that any transfer of copyright to a publisher is subject to the licence granted by the faculty author to Harvard.

[131] Subsequently, the Kennedy School of Government, MIT, the Stanford School of Education and Harvard's Graduate School of Education (GSE) also endorsed open access policies.

[132] See the Technology Policy on the White House web site at http://www.whitehouse.gov/agenda/technology/.

[133] *Transparency and Open Government*, Memorandum for the Heads of Executive and Agencies, Office of the Press Secretary, The White House, 21 January 2009, available at http://www.whitehouse.gov/the_press_office/Transparency_and_Open_Government/.

[134] See http://www.whitehouse.gov/open/ and http://www.whitehouse.gov/open/blog/ accessed 14 July 2009.

[135] Following the launch strategically important datasets continue to be promptly and progressively uploaded, with Landsat Satellite data and the US Geological Survey (USGS) Oil and Gas Assessment Database being included in the datasets currently available. Additionally, the US Geological Survey's mineral resource database is available at http://www.data.gov/details/14.

[136] *Copyright Act* 1985, s 12.

[137] Garfield Giff and David Coleman, *Spatial Data Infrastructure Funding Models: A necessity for the success of SDIs in Emerging Countries*, FIG XXII International Congress, Washington DC, 26 April 2002; see also Garfield Giff, *Financing Spatial Data Infrastructure Development: Towards Alternative Funding Models*, Proceedings of International Symposium on SDI, Melbourne Australia, November 2001.

[138] Irwin Itzkovitch, *A National Partnership to Develop the Canadian Geospatial Data Infrastructure (CGDI)*, 8th

Conclusion

The federal government's positive response to the *Venturous Australia* recommendations in the *Powering Ideas* White Paper, the prominence given to the issue of access to PSI in the Department of Broadband, Communications and the Digital Economy's *Australia's Digital Economy, Future Directions* report, the formation of the Government 2.0 Taskforce, the enactment of Right to Information legislation and the creation of Information Commissioner positions by federal and State governments, when viewed together, provide a clear indication that Australian governments are now seized of the importance of proceeding to develop and implement a comprehensive national information strategy. As is apparent by reviewing developments in comparable jurisdictions, putting in place such a strategy is essential if Australia is to become a fully engaged participant in the global information economy.

As we begin to move along this path, much assistance can be obtained from the policies and practices developed in jurisdictions with the most advanced national information strategies (such as the United States and the United Kingdom), as well as declarations and recommendations of intergovernmental organisations such as the OECD and international bodies. To date, Australian activities aimed at enabling information access and reuse have been largely focused on two key areas: spatial data and publicly funded research outputs (whether in the form of publications or data). Policies and practices that have been developed in Australia for specific information domains will also provide guidance in developing a more broadly applicable strategy for access to PSI. However, in developing an Information Policy Framework, the importance of a comprehensive and integrated strategy should not be overlooked. It is important that the issues arising from specific data domains or economic sectors are not superimposed over the national Information Policy Framework. Rather, the focus should be on developing a comprehensive and integrated high level Information Policy Framework, within which consideration can be given to specific issues arising in particular sectors or information domains. As Uhlir emphasised in his 2004 report for UNESCO[139], in developing a national information policy, a broad approach must be taken. The Information Policy Framework for the management and active dissemination of PSI should be comprehensive and integrated, although individual consideration may be required for specific areas or sectors with special information objectives and implementation requirements (such as health, environment, energy, transportation, finance and defence).

United Nations Regional Cartographic Conference for the Americas, New York, 27 June -1 July 2005.

[139] Paul Uhlir, *Policy Guidelines for the Development and Promotion of Governmental Public Domain Information*, UNESCO, Paris, 2004, p 1. See UNESCO at http://portal.unesco.org/ci/en/ev.php-URL_ID=15862&URL_DO=DO_TOPIC&URL_SECTION=201.html.

Chapter 1: Australia

Australia does not yet have a national policy framework addressing access to and use of PSI, an important point of difference with the United States, the United Kingdom and European countries. The situation with respect to PSI access and use has been fragmented and lacking a coherent policy foundation, whether viewed in terms of interactions within or among the different levels of government at the local, State/Territory and Federal levels, or between the government, academic and private sectors.[140] Some important practices and initiatives can be identified but they are only loosely connected, deal with different aspects of access and reuse and lack any formal coordination.[141]

However, this situation is beginning to change, with the need for a comprehensive national information policy framework to be developed having been recognised in the Review of the National Innovation System (NIS) in 2008[142] and acknowledged in ministerial addresses in 2008 and 2009. The *Venturous Australia – Building Strength in Innovation* ("Venturous Australia") report produced by the NIS review panel[143] recommended that a National Information Strategy should be established, to optimise the flow of information in the Australian economy.[144] It further recommended that, "to the maximum extent practicable, information, research and content funded by Australian governments should be made freely available over the internet as part of the global public commons",[145] that "Australian governments should adopt international standards of open

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[140] See Ian Reinecke, *Information Policy and E-Governance in the Australian Government: Report: A report for the Department of Prime Minister and Cabinet*, March 2009 (updated to 31 July 2009), at p13. Reinecke comments: "There is evidence that Australia has lagged behind the countries that it takes as points of reference in public policy development and practice in recent years. The information policy and management agenda has at various times in the last decade received some attention but has been somewhat subsumed by issues more related to technical matters and ICT procurement practice." Available at http://www.dpmc.gov.au/publications/information_policy/index.cfm, accessed 4 September 2009.

[141] Ibid. Reinecke comments at p13 that "a comprehensive and coordinated approach to information management has not had recent strong emphasis".

[142] The Review of the National Innovation System was commissioned by Senator Kim Carr, Minister for Innovation, Industry, Science and Research on 22 January 2008. The review panel, chaired by Dr Terry Cutler, was asked to identify gaps and weaknesses in Australia's innovation system and recommend ways to correct them. The panel considered evidence of both market failure — where commercial incentives are insufficient to induce socially and economically desirable behaviour; and system failure — where the scope for innovation is limited by policy and institutional shortcomings. The panel released its final report (a "Green Paper"), *Venturous Australia - Building Strength in Innovation,* on *29* August 2008. See generally http://www.innovation.gov.au/innovationreview/Pages/home.aspx

[143] Cutler & Company, *Venturous Australia - Building Strength in Innovation,* report on the Review of the National Innovation System, for the Australian Government Department of Innovation, Industry, Science and Research, 29 August 2008. Note especially Recommendations 7.7, 7.8 and 7.14; available at http://www.innovation.gov.au/innovationreview/Pages/home.aspx accessed on 11 June 2009.

[144] Ibid. In Recommendation 7.7 which states:
Australia should establish a National Information Strategy to optimise the flow of information in the Australian economy.
The fundamental aim of a National Information Strategy should be to:
  • utilise the principles of targeted transparency and the development of auditable standards to maximise the flow of information in private markets about product quality; and
  • maximise the flow of government generated information, research, and content for the benefit of users (including private sector resellers of information).

[145] Recommendation 7.14.

publishing as far as possible"[146] and that PSI "should be released under a creative commons licence".[147]   In another important development, the *Digital Economy, Future Directions* consultation paper released by the Department of Broadband, Communications and the Digital Economy in December 2008 raised "Open Access to Public Sector Information"[148] as a key issue for discussion, observing that there is increasing support for "the notion that the Australian Government should provide access to public sector information on terms that clearly permit the use and re-use of that information."[149] The final report, *Australia's Digital Economy: Future Directions* expressly recognised "the digital economy and innovation benefits generated by open access to PSI, subject to issues such as privacy, national security and confidentiality".[150] Enabling open access to PSI is seen not only as a way of promoting public sector innovation but also as a means by which government can facilitate private sector innovation.[151]

The federal government's response to the Venturous Australia recommendations, contained in the White Paper, *Powering Ideas: An Innovation Agenda for the 21st Century*,[152] released as part of the May 2009 Budget process, is generally supportive of its recommendations on access to PSI. *Powering Ideas* accepted the need to build on initiatives already commenced by agencies including the Australian Bureau of Statistics, the Bureau of Meteorology and Geoscience Australia and "to develop a more coordinated approach to Commonwealth information management, innovation and engagement".[153] A similar approach was taken by the Victorian Parliament's Economic Development and Infrastructure Committee (EDIC) on the *Inquiry into Improving Access to Victorian Public Sector Information and Data,* tabled in parliament on 24 June 2009.[154] The 46

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[146] Recommendation 7.8

[147] Recommendation 7.8

[148] See Australian Government, Department of Broadband, Communications and the Digital Economy's *Digital Economy: Future Directions* consultation paper, 18 December 2008, at http://www.dbcde.gov.au/communications_for_business/Digital_Economy_Development/digital_economy_consultatio n accessed 22 May 2009.

[149] Ibid, p 3. Responses received by government during this consultation process informed the White Paper, *Powering Ideas: An Innovation Agenda for the 21st Century*, its response to the Venturous Australia Green Paper. See the Submission of the Intellectual Property: Knowledge, Culture and Economy (IP: KCE) Research Program, Queensland University of Technology (QUT) to the Department of Broadband, Communications and Digital Economy's *Digital Economy Future Directions* consultation paper, prepared by Brian Fitzgerald, Anne Fitzgerald, Jessica Coates and Kylie Pappalardo, 4 March 2009, p2, available at http://www.dbcde.gov.au/digital_economy/digital_economy_consultation/submissions (under "Queensland University of Technology QUT Law Faculty) at 10 June 2009.

[150] *Australia's Digital Economy: Future Directions,* Department of Broadband, Communications and the Digital Economy, July 2009 at p12, available at http://www.dbcde.gov.au/?a=117295.

[151] Ibid, p11.

[152] *Powering Ideas: An Innovation Agenda for the 21st Century*, Department of Innovation, Industry, Science and Research, 12 May 2009, Chapter 6 (Public Sector Innovation), available at http://www.innovation.gov.au/innovationreview/Documents/PoweringIdeas_fullreport.pdf, accessed 14 July 2009.

[153] Ibid, p 57,.

[154] Victorian Parliament, Economic Development and Infrastructure Committee, *Inquiry into Improving Access to Victorian Public Sector Information and Data*, 27 June 2009, available at http://www.parliament.vic.gov.au/edic/inquiries/access_to_PSI/final_report.html. Note in particular submissions by the Australian Bureau of Statistics at http://www.parliament.vic.gov.au/edic/inquiries/access_to_PSI/submissions/PSI_Sub_63_ABS.pdf, Bureau of Meteorology at http://www.parliament.vic.gov.au/edic/inquiries/access_to_PSI/submissions/PSI_Sub_17_Bureau_Meteorology.pdf, QUT Law Faculty at http://www.parliament.vic.gov.au/edic/inquiries/access_to_PSI/submissions/PSI_Sub_38_QUT_Law_Faculty.pdf, and transcripts of presentations by Professor A Fitzgerald at

recommendations of the Victorian Parliament's EDIC include that the Victorian government should publicly state that it endorses open access as the default position for the management of its PSI,[155] develop a whole-of-government information management framework (IMF),[156] adopt Creative Commons licensing as the default licensing system for the IMF[157] and develop specific guidelines for the pricing of PSI, emphasising no or marginal cost provision wherever possible.[158]

Speeches by senior federal government Ministers in early 2009 expressly supported the introduction of reforms aimed at providing greater access to government information, through improvements to freedom of information ("FOI") regimes and moving from the traditional "pull" model inherent in FOI laws to a "push" model in which government proactively releases information in accordance with an established information publication scheme, rather than reactively in response to specific requests. Important speeches signalling the shift in thinking at the federal level were delivered in early 2009 by Senator John Faulkner, (then) Special Minister of State, announcing the overhaul of the federal Freedom of Information Act and the creation of the Office of the Information Commissioner[159] and Lindsay Tanner MP, Minister for Finance and Deregulation at the CeBIT Conference, discussing how web 2.0 technologies enable "the nature of the dialogue between Government and the wider community to be completely transformed".[160] To advance work in these areas, in June 2009, the federal government appointed the Government 2.0 Taskforce to work with it to identify policies and frameworks to make PSI more readily accessible and usable and to encourage online engagement between government and citizens.[161] The federal government and several State governments have taken steps to reform the administrative arrangements for access to PSI, through the creation of Information Commissioner positions and the introduction of legal frameworks supporting a "right to information".[162]

Whilst these steps by the federal and state governments are significant, they are very recent developments. For many years until recently, Australia was largely disengaged from the developments in theory and practice evident in the US, EU and international organisations from the mid 1990s. With some notable exceptions,[163] there has until recently been little evidence of an

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http://www.parliament.vic.gov.au/edic/inquiries/access_to_PSI/transcripts/EDIC_080812_A_Fitzgerald.pdf and Dr Terry Cutler at
http://www.parliament.vic.gov.au/edic/inquiries/access_to_PSI/transcripts/EDIC_300908_Cutler_&_Co.pdf

[155] Recommendation 1.

[156] Recommendation 2.

[157] Recommendation 15.

[158] Recommendation 16.

[159] *Open and Transparent Government – the Way Forward*, delivered on 24 May 2009, at the Australia's Right To Know Freedom of Speech Conference, Sydney, available at http://www.smos.gov.au/speeches/2009/sp_20090324.html accessed on 11 June 2009. See also *Powering Ideas: An Innovation Agenda for the 21st Century*, Chapter 6 (Public Sector Innovation) at p58, available at http://www.innovation.gov.au/innovationreview/Pages/home.aspx accessed on 22 May 2009.

[160] Delivered on 13 May 2009 at the e-Government Forum held as part of the CeBIT conference, available at http://www.financeminister.gov.au/speeches/2009/sp_20090513.html

161 See http://gov2.net.au . In July 2009, the Government 2.0 Taskforce released for comments an Issues Paper, *Towards Government 2.0,* available at http://gov2.net.au/consultation/2009/07/17/towards-government-2-0-an-issues-paper/, accessed 19 July 2009.

[162] Queensland was the first State to enact legislation, in the form of the *Right to Information Act* 2009 and the *Information Privacy Act* 2009 and accompanying regulations, which came into force on 1 July 2009, see http://www.oic.qld.gov.au/legislation and http://www.rti.qld.gov.au/rti/the_information_commissioner.asp The Queensland government has also published a *Statement of Right to Information Principles for the Queensland Public Service*, see http://www.rti.qld.gov.au/downloads/Right%20to%20Information%20Principles.pdf.

[163] See for example, *Unlocking the Potential: Digital Content Industry Action Agenda*, Strategic Industry Leaders Group report to the Australian Government, November 2005 at

awareness or appreciation of the steps being taken elsewhere. For reasons which have yet to be fully understood, Australia largely failed to engage with developments in the formulation of policies and principles for access to PSI that took place at the national (UK, US, NZ), regional (EU) and the international levels (UNESCO, OECD) over the last decade. At the international level in particular, the Australian government appears not to have played a significant role (via participation in working groups) formed by a range of international organisations (notably UNESCO, OECD and ICSU/CODATA) to advance the policy framework for access to PSI. (Australia only rejoined CODATA, one of the leading international organisations concerned with science data, in 2008 after our membership lapsed many years earlier.)

The issue of access to and reuse of government information and data has been considered by various government agencies and in reports commissioned by governments over the last 15 years. The National Library of Australia was one of the first federal Government agencies to realise – by the mid 1990s - the potential of the emerging internet to provide enhanced citizen access to government information in digital format.[164] The landmark 1994 report, *Commerce in Content: Building Australia's International Future in Interactive Multimedia Markets*, commissioned from Cutler & Company by the federal government[165] made several recommendations as to how governments, at both federal and state level, could leverage off the cultural and content materials they created, owned or used, in order to accelerate the development of the then emerging digital content sector.[166] The recommendations included providing easy access to culturally significant data in digital form, as well as providing comprehensive access to nationally significant data, and promoting the development of standards for document and image digitalisation and archiving. Contemporaneously, the Australian Science and Technology Council's (ASTC) 1994 report, *The Networked Nation*, proposed that government should stimulate public interest in, and facilitate access to, government information via electronic networks. ASTEC noted the need for a coordinated approach by government and recommended the establishment of a Commonwealth Government Information Services Task Force to provide this coordination, to develop pilot programs, to investigate options for extending community access to networked information, and to develop a directory of government information publicly available over networks. In 2006, the Prime Minister's Science, Engineering and Innovation Council (PMSEIC) in its report, *From Data to Wisdom: Pathways to Successful Data Management for Australian Science*,[167] recommended that "Australia's government, science, research and business communities establish a nationally supported long-term strategic framework for scientific data management, including guiding principles, policies, best practices and infrastructure"[168] and the adoption of "mechanisms to enable

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http://www.dbcde.gov.au/__data/assets/pdf_file/0006/37356/06030055_REPORT.pdf accessed on 22 May 2009.

[164] Tony Barry, *Caught in a Web – Australian Government network policy*, paper presented at AUUG '95 and Asia-Pacific World Wide Web '95 Conference, available at http://www.csu.edu.au/special/conference/apwww95/papers95/tbarry/tbarry.html accessed 1 September 2008.

[165] The report was commissioned by the Commonwealth Department of Industry, Science and Technology (DIST), CSIRO and the Broadband Services Expert Group.

[166] Cutler & Company, *Commerce in Content: Building Australia's International Future in Interactive Multimedia Markets*, A report for the Department of Industry Science and Technology (DIST), CSIRO, and the Broadband Services Expert Group, 1994, Part 8: The role and contribution of government, available at http://www.nla.gov.au/misc/cutler/cutler8.html at 16 July 2008.

[167] Prime Minister's Science, Engineering and Innovation Council, Working Group on Data for Science, *From Data to Wisdom: Pathways to Successful Data Management for Australian Science*, (2006) http://www.dest.gov.au/sectors/science_innovation/publications_resources/profiles/Presentation_Data_for_Science.htm; see also http://pandora.nla.gov.au/tep/75221.

[168] Ibid, Recommendation 1.

the discovery of, and access to, data and information resources".[169]

Opportunities arose on several occasions up to the mid-2000s to examine the question of access to PSI, but they were either not recognised as such or were not acted upon. The Copyright Law Review Committee's review of Crown copyright in 2005 – 2006, which was established to address concerns about governments' anti-competitive licensing of PSI, provided an opportunity to consider not only the subsistence and exercise of copyright in public sector materials but also to engage with the broader policy issues about access to and reuse of PSI. Unfortunately, the CLRC failed to contextualise its inquiry and recommendations within the framework of international developments and concepts about access to and reuse of government information and data.[170]

Developments that have occurred in overseas jurisdictions in establishing systems for access to environmental information[171] have gone almost entirely unremarked upon in Australia and there is no current discussion of their relevance or significance domestically.

In the absence of a general national or inter-governmental policy, activities in Australia relating to information access and reuse have been largely focused on two key areas: spatial data and publicly funded research outputs (whether in the form of publications or data). Much of the impetus for access to PSI has come from the spatial information sector,[172] in the context of longstanding efforts to establish spatial data infrastructures (SDIs) at the national and state levels.[173] The spatial information industry has long been a proponent of the view "that government held information, and in particular spatial information, will play an absolutely critical role in increasing the innovative

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[169] Ibid, Recommendation 6.

[170] For an analysis of the CLRC's inquiry, see Professor G Greenleaf's submission (no. 504(R)) to the Review of the National Innovation System, at pp 70 – 71, available at http://www.innovation.gov.au/innovationreview/Documents/504(R)-Graham_Greenleaf.pdf, accessed 14 July 2009. Professor Greenleaf describes the CLRC's Crown copyright review as "anaemic", commenting: "The CLRC's terms of reference were extremely broad, and included an explicit requirement for it to consider the rationale for government ownership of copyright material. Despite this, the CLRC does not seem to have seriously considered (or given reasons for rejecting) any of the alternative ways by which more substantial changes could be made to put Crown materials in the public domain. …. In effect, there has not yet been a comprehensive consideration of how a public sector public domain in Australia could stimulate innovation – quite clearly recognized in the European Union directive - and serve the public interest in other ways. The CLRC's report was a missed opportunity rather than a reason to accept the Crown copyright status quo."

[171] Such as environmental information reporting obligations under the Aarhus Convention (Convention on Access to Information, Public Participation and Decision Making, and Access to Justice in Environmental Matters, Aarhus, Denmark, 25 June 1998) or the EU Directive on access to environmental information European Directive 2003/4/EC on public access to environmental information.

[172] Much of the focus of the spatial industry has been on the development of spatial data infrastructures at the national and state levels. See generally S Jacoby, S Smith, L Ting, and I Williamson, *Developing a Common Spatial Data Infrastructure between State and Local Government - An Australian case study*, International Journal of Geographical Information Science, vol. 16, no. 4, pp 305-322; B Thompson, T Chan, R Slee, P Kinne, A Jahshan, P Woodgate, I Bishop and D McKenzie, *Virtual Australia: its key elements – know, think, communicate*, International Journal of Digital Earth, vol. 1, issue 1, January 2008 at pp 66-87, available at http://www.informaworld.com/smpp/content~content=a790360558~db=all~order=page. See also K McDougall, *Unlocking The Potential of Spatial Information Through Data Sharing – It's A Two Way Street*, Queensland Spatial Conference 2008, 17-19 July 2008, Gold Coast; M Warnest, K McDougall, A Rajabifard and I Williamson, *Local and state-based collaboration: the key to unlocking the potential of SDI*, Centre for Spatial Data Infrastructures and Land Administration, Spatial Sciences 2003; and A Rajabifard, A Binns and I Williamson, *Creating an Enabling Platform for the Delivery of Spatial Information*, Proceedings of SSC 2005 Spatial Intelligence, Innovation and Praxis: The national biennial Conference of the Spatial Sciences Institute, September 2005, Melbourne, Spatial Sciences Institute.

[173] See I Williams, T Chan and W Effenberg, *Development of Spatial Data Infrastructures - Lessons Learnt From The Australian Digital Cadastral Databases*, (1998) GEOMATICA 52(2), 177-187.

capacity of this nation."[174] In fact, the most advanced data access and reuse policy developed in Australia to date – and only one ever intended to apply Australia-wide at the federal level - is the Spatial Data Access and Pricing Policy[175] (known as the OSDM Policy) adopted by the Commonwealth government in 2001. The OSDM Policy, which forms the basis of the free data download services offered by Commonwealth government agencies including Geoscience Australia[176], was in line with developments in other jurisdictions (notably the United States and the United Kingdom) at the time it was formulated.

Various initiatives relating to publicly funded research results were developed within the Accessibility Framework for Publicly Funded Research established in 2004 as part of the *Backing Australia's Ability – Building Our Future through Science and Innovation* package.[177] The Accessibility Framework was designed to manage research information, outputs and infrastructure in order to enable them to be more readily discovered, accessed and shared. It aims to provide a regulatory environment that both enables and encourages the population of digital repositories in order to provide better access to information.[178] The Open Access to Knowledge (OAK) Law and Legal Framework for e-Research projects established as part of the Research Information Infrastructure Framework for Australian Higher Education under *Backing Australia's Ability* dealt extensively with the legal issues involved in managing open access publication of research papers and data so as to enable access and reuse.[179] Several universities (including QUT)[180] have introduced open access policies for academic publications and, in December 2006, the two major Australian public research funding bodies – the Australian Research Council (ARC) and the National Health and Medical Research Council (NHMRC) – announced the introduction of open access guidelines for published papers and data resulting from funded research projects, effective

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[174] Submission no. 307, Australian Spatial Consortium, at p. 2, available at http://www.innovation.gov.au/innovationreview/Documents/307-Australian_Spatial_Consortium.pdf , accessed 14 July 2009.

[175] See Commonwealth Interdepartmental Committee on Spatial Data Access and Pricing, *A Proposal for a Commonwealth Spatial Data Access and Pricing Policy*, June 2001, at http://www-ext.osdm.gov.au/osdm/policy/accessPricing/SDAP.pdf accessed on 22 May 2009 and generally http://www.osdm.gov.au/OSDM/Policies+and+Guidelines/Spatial+Data+Access+and+Pricing/default.aspx accessed on 22 May 2009.

[176] See https://www.ga.gov.au/products/servlet/controller?event=DEFINE_PRODUCTS.

[177] See http://www.dest.gov.au/sectors/research_sector/policies_issues_reviews/key_issues/accessibility_framework/ and http://backingaus.innovation.gov.au/ accessed on 24 April 2008.

[178] See http://www.dest.gov.au/sectors/research_sector/policies_issues_reviews/key_issues/accessibility_framework/

[179] See http://www.oaklaw.qut.edu.au and http://www.e-research.law.qut.edu.au/

[180] See http://eprints.qut.edu.au/. In 2008, QUT amended clause 3.1.5 of its IP policy to ensure open access to scholarly works published by QUT academics – see http://www.mopp.qut.edu.au/D/D_03_01.jsp#D_03_01.05.mdoc . It states:
QUT assigns the right to publish scholarly works to the creator(s) of that work. The assignment is subject to a perpetual, irrevocable, worldwide, royalty-free, non-exclusive licence in favour of QUT to allow QUT to use that work for teaching, research and commercialisation purposes and to reproduce and communicate that work online for non-commercial purposes via QUT's open access digital repository.
If required, QUT will sign documents to more fully record the staff member's ownership of the right of publication of the copyright in a scholarly work and QUT's non-exclusive licence to that work.
The version of the scholarly work that QUT can make available via the digital repository may be the published version or the final post-peer review manuscript version. QUT will agree to third party publisher-requested embargoes of 12 months or less (from date of publication by the third party publisher) on the publication of the manuscript via the digital repository.
Open access requirements have also been adopted by the University of Tasmania (see http://eprints.utas.edu.au/) and Charles Sturt University (see http://bilby.unilinc.edu.au:8881/R?func=search&local_base=GEN01-CSU01) and are being considered at Macquarie University (see http://www.earlham.edu/~peters/fos/2008/07/macquarie-vc-preparing-to-propose-oa.html).

2008.[181] Both policies encourage researchers to:

> Consider the benefits of depositing their data and any publications arising from a research project in an appropriate subject and/or institutional repository [because in order to] maximise the benefits from research, findings need to be disseminated as broadly as possible to allow access by other researchers and the wider community.[182]

At the State and Territory level there is a lack of consistency in policies on access to and reuse of government information and data. States and Territories have developed their own policies on information access and reuse and, in recent years some have also implemented policies on dealings with public sector intellectual property. There is a broadly held view that since public sector information has been produced through the expenditure of public funds, it should be made available to citizens and businesses.[183] However, while access is generally supported, there are differences in how this is achieved in practice and in the pricing models applying in the various jurisdictions.

There has been an ongoing tension in Australian governments (Federal, State and Territory) between, on the one hand, adopting an open access approach and, on the other hand, focusing on cost recovery or generating commercial returns or rents. This dichotomy was remarked upon by KPMG Consulting after comparing geospatial data policies and practices in its 2001 *Geospatial Data Policy Study Project Report* for GeoConnections Canada:

> Surprisingly, if the wording of the overarching national cost recovery policies in the United States and Australia are compared side by side without reference to the application of these policies, the policies seem very much alike. …. While the national data pricing policies in the USA and Australia are very similar in terms of the words used in the overarching policies, they are clearly different in both application, apparent intent, and result. The US agencies reporting data income had revenues equal to 2% of their expenses. The Australian agencies had revenues equal to over 30% of expenses. (The average Canadian agency is near the middle with about 13% of costs recovered.)
> ….
> Most of the data the US clients acquire is free (65% of the data), while most of the data acquired by Australian clients are at some form of market or cost recovery (75%). Differences in the two countries' federal cost recovery implementation and copyright legislation drives the disparity…… With generally free and open access to federal public domain data, US users are satisfied and feel major business opportunities result. Australian clients are less satisfied with the current geospatial data environment. Lack of a national geospatial data strategy in Australia and competition by government agencies in geomatic services that are available in the private sector are believed to be detrimental to the industry and economy as a whole.[184]

Gradually, over the last few years, things have begun to change, led by Australian government agencies including Geoscience Australia, the Australian Bureau of Statistics, the Bureau of

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[181] Australian Research Council, Discovery Projects Funding Rules for funding commencing in 2008 http://www.arc.gov.au/pdf/DP08_FundingRules.pdf; National Health and Medical Research Council, Project Grants Funding Policy for grants commencing in 2008 http://www.nhmrc.gov.au/publications/_files/profundingpol.pdf. See also the ARC's response to the Productivity Council's draft research report on Public Support for Science and Innovation (2006), recommending that consideration be given to the funding of institutional open access repositories: Australian Research Council, *Response to the Productivity Commission Draft Research Report – Public Support for Science and Innovation* (2006) http://www.arc.gov.au/pdf/response_PCdraftresearchreport_06.pdf.

[182] Australian Research Council, Discovery Projects Funding Rules for funding commencing in 2008, [1.4.5.1] http://www.arc.gov.au/pdf/DP08_FundingRules.pdf; National Health and Medical Research Council, Project Grants Funding Policy for grants commencing in 2008, [16.2]. http://www.nhmrc.gov.au/publications/_files/profundingpol.pdf.

[183] Rob Davies and Mary Rowlatt, *Report on the ePSINet Visit to Australia (9 – 15 May 2004)*, at p 4.

[184] KPMG Consulting (Garry Sears), *Geospatial Data Policy Study Project Report – Executive Summary*, prepared for GeoConnections Policy Advisory Node, March 2001 at pp16-17, available at http://www.geoconnections.org/programsCommittees/proCom_policy/keyDocs/KPMG/KPMG_E.pdf,

Meteorology, the Education and Innovation & Industry Departments, Australian Government Information Management Office (AGIMO) and the Prime Minister's Science, Engineering and Innovation Council (PMSEIC). Acceptance of the importance of developing the policy framework for access to PSI has been growing, while key federal government agencies have made significant changes to their information licensing practices. In November 2005, the Australian Bureau of Statistics (ABS) abandoned the restrictive licensing practices it had previously applied in licensing its datasets, which had involved charging fees for access to data and the restriction or prohibition of commercial downstream use by the licensee and/or others. Since then the ABS has eliminated virtually all charges for data and restrictions on downstream use of their data (that is, both access and reuse), whether commercial or otherwise. [185] The Australian Bureau of Meteorology (BoM) is moving in the same direction, making water data available through the Australian Water Resources Information System (AWRIS) under Creative Commons licences.[186] Geoscience Australia offers free downloads of geospatial data from its website, based on the OSDM Policy.[187] Whilst initiatives such as these are important and provide evidence of a growing awareness of the importance of ensuring access to and reuse of PSI, they remain fragmented and separate and involve relatively few Government departments and agencies.[188]

One of the most influential projects in Australia in recent years has been the Government Information Licensing Framework Project (GILF Project).[189] It grew out of a project commissioned by the Queensland Spatial Information Council (QSIC) in 2006 to develop a legal framework to support the sharing and reuse of spatial and other information within and across the various levels of government and between government and the private sector. The focus of the GILF project was the development of a licensing model to be applied to PSI, the objective being new standardised information licensing arrangements which could be recommended for use with all kinds of Queensland government information to enable enhanced, on-demand access to PSI.[190] Importantly, the GILF project did not directly address information policy per se. However, by focusing attention on removing impediments to accessing PSI caused by inadequate or inappropriate licensing practices, its findings and recommendations about the use of Creative Commons licences on PSI directly influenced the reviews of information access policies by the federal government,[191] other

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[185] Siu-Ming Tam, *Informing the Nation – Open Access to Statistical Information in Australia,* Statistical Journal of the IAOS: Journal of the International Association for Official Statistics (IAOS), Vol.25, No.3-4, pp 145-153, 2008, available at http://iospress.metapress.com/content/06h2q22084lp1v31/?p=5c06202d5bdd43d7921a2dd63cb08714&pi=7 The paper is also available at http://www.unece.org/stats/documents/ece/ces/ge.45/2009/wp.11.e.pdf and the presentation slides can be downloaded at http://www.unece.org/stats/documents/ece/ces/ge.45/2009/wp.11.e.ppt.

[186] Jurisdictional Reference Group on Water Information (JRGWI), Australian Bureau of Meteorology, *Item 7: Creative Commons Licensing*, Meeting 6, Melbourne, 23-24 July 2009.

[187] See https://www.ga.gov.au/products/servlet/controller?event=DEFINE_PRODUCTS accessed on 22 May 2009.

[188] Among the most prominent are Geoscience Australia, Australian Bureau of Statistics, the Department of Education (DEWWR), the Department of Innovation, Industry, Science and Research (DIISR) and AGIMO.

[189] See the GILF project website at http://www.gilf.gov.au

[190] Queensland Government, Queensland Spatial Information Council, *Government Information and Open Content Licensing: An access and use strategy* (Government Information Licensing Framework Project Stage 2 Report) (October 2006). The GILF standard licences consist of the Creative Commons licences and a template Restrictive Licence. See http://www.qsic.qld.gov.au/qsic/QSIC.nsf/CPByUNID/BFDC06236FADB6814A25727B0013C7EE accessed 22 May 2009. See also the GILF website at http://www.gilf.gov.au for further details, including access to an online interactive licensing tool designed to enable licences to be selected from the GILF standard suite of licences. There are six Creative Commons licences as well as a template Restrictive Licence for PSI which is subject to restrictions such as privacy, confidentiality or statutory constraints.

[191] See *Venturous Australia – Building Strength in Innovation, Review of the National Innovation System*, Report for the Australian Government Department of Innovation, Industry, Science and Research, September 2008. It recommended (recommendation 7.8) that PSI "should be released under a creative commons licence". Available at

State governments[192] and the New Zealand Government.[193]

At the federal government level, the GILF project also served as a catalyst for renewed effort on the development of a national information framework when it was adopted by the Ministerial Online and Communications Council (OCC) in 2007. The need for a coordinated national approach to information access and reuse was acknowledged in the proposal for a National Information Sharing Strategy (NISS) which was approved by Commonwealth, State and Territory Ministers at the June 2007 meeting of the OCC. The proposal (later renamed the National Government Information Sharing Strategy (NGISS)) and carried forward by the Australian Government Information Management Office (AGIMO), envisaged the development of a standardised approach to information sharing to support the delivery of government services, for use by all portfolio areas at all levels of government.[194]

It should be noted that there are numerous specific legislative provisions and rules governing rights of access to and reuse of the broad range of digital copyright materials held by libraries and archives.[195] While such regulatory provisions are of relevance, they are not the immediate focus of this study, which is concerned primarily with policies and principles governing access to and reuse of materials produced by governments or with public sector funding.

Office of Spatial Data Management (OSDM)

"Commonwealth Public Interest Spatial Data Transfer Policy", Commonwealth Spatial Data Committee (CSDC) (1995)

In recognition of the need to coordinate the management of land-related information held by the Commonwealth Government, the Inter-departmental Steering Committee on Coordination of

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http://www.innovation.gov.au/innovationreview/Pages/home.aspx accessed on 11 June 2009.

[192] The Victorian Parliament, Economic Development and Infrastructure Committee, in its report, *Inquiry into Improving Access to Victorian Public Sector Information and Data*, (27 June 2009), recommended that the Victorian government should adopt Creative Commons licensing as the default licensing system for PSI (recommendation 15); see http://www.parliament.vic.gov.au/edic/inquiries/access_to_PSI/final_report.html

[193] On 1 July 2009, the Ministry for the Environment (Manatū Mō Te Taiao) announced that it was making two important environmental databases - the Land Cover Database (LCD) and Land Environments New Zealand (LENZ) classification - available online, for free and licensed under an unrestricted Creative Commons licence (CC-BY). See Land Information New Zealand in consultation with the State Services Commission and others, *Understanding our Geographic Information Landscape: A New Zealand Geospatial Strategy*, (January 2007) available at www.geospatial.govt.nz/assets/Geospatial-Strategy/nz-geospatial-strategy-2007.pdf.

[194] On these developments, see Ian Reinecke, *Information Policy and E-Governance in the Australian Government: Report: A report for the Department of Prime Minister and Cabinet*, March 2009 (updated to 31 July 2009), at pp13-15, available at http://www.dpmc.gov.au/publications/information_policy/index.cfm , accessed 4 September 2009.

[195] Such provisions are found in the *Copyright Act 1968* and the various public records and archives legislation, such as the *Archives Act 1983* (Cth) and the *Public Records Act 2002* (Qld). For an analysis of access rights to digital materials held by libraries see Andrew Kenyon and Emily Hudson, *Without Walls: Copyright Law and Digital Collections in Australian Cultural Institutions*, Script-Ed Volume 4, Issue 2, June 2007. This article uses recent experience in Australia to discuss copyright's impact on digitisation, and to explain why and how copyright has influenced the cultural institution "without walls". It also describes recent amendments to Australian copyright law – in particular, introduction of a flexible exception for some activities by cultural institutions. This may represent an important development in Australia, and offers a relevant case study internationally, for addressing copyright issues about digital access.

Commonwealth Land-Related Data was formed in 1983.[196] This committee was succeeded in 1985 by the Commonwealth Executive Management Committee (EMC), which lapsed on completion of the first edition of the LANDSEARCH directory in 1986. The Commonwealth Land Information Forum (CLIF) was established in 1989 to coordinate matters relating to land information across the Commonwealth. However, as CLIF was focused on land information and matters of a technical nature, it was unable to effectively address the broader policy issues arising in relation to spatial data management. Consequently, a series of meetings by Portfolio Secretaries in 1991 led to a recommendation that CLIF be replaced by the Commonwealth Spatial Data Committee (CSDC).[197]

Subsequently, the CSDC was established in 1992 to administer Commonwealth agency approaches to spatial data management.[198] Several factors contributed to the decision to establish the CSDC to coordinate Commonwealth government spatial data management:

- the demands placed on spatial data by GIS;
- the need to avoid duplication of spatial data collection and management;
- the need to combine spatial data products;
- the need to form common approaches to issues such as data standards, distribution, copyright, privacy and pricing; and
- the need for the Commonwealth to be represented on forums such as ANZLIC.[199]

In October 1995, the CSDC developed the *Commonwealth Public Interest Spatial Data Transfer Policy*, giving effect to the *Draft National Agreement on the Transfer of Land Related Data*, which had been developed by ANZLIC and endorsed by the CSDC. The basic principle underlying the *Commonwealth Public Interest Spatial Data Transfer Policy* was to maximise cost-effective use of Commonwealth spatial data, produced and funded as a public interest activity, by promoting improved access to it. Under the policy, nominated public interest spatial datasets were to be made available at the "average cost of transfer", which was defined as:

> [t]he cost of providing a copy of the existing master dataset to a user. The actual cost will depend on factors such as the agency's distribution structure and the format in which the data is stored. The original collection costs are not included. Any upgrade or further processing of public interest data to meet specific client needs may be subject to additional charges.

The policy only applied to those spatial datasets nominated by the data custodian and listed in a Schedule to the policy.

The practical operation of the policy of recovering the average cost of distribution of data was explained by the Commonwealth Interdepartmental Committee on Spatial Data Access and Pricing in *A Proposal for a Commonwealth Policy on Spatial Data Access and Pricing* (2001) as follows:

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[196] For background, see Office of Spatial Data Management (OSDM), *Proposed Coordination Arrangements for the Implementation of the Commonwealth Policy on Spatial Data Access and Pricing,* 2002.
[197] See the report of the Commonwealth Interdepartmental Committee on Spatial Data Access and Pricing (June 2001) *A Proposal for a Commonwealth Policy on Spatial Data Access and Pricing*, p 46, available at http://www.osdm.gov.au/osdm/policy/accessPricing/SDAP.pdf.
[198] See Renate Mason, *Developing Australian Spatial Data Policies – existing practices and future strategies,* PhD thesis, School of Geomatic Engineering, UNSW, 2000, p 142, http://www.library.unsw.edu.au/~thesis/adt-NUN/uploads/approved/adt-NUN20021106.165932/public/01front.pdf and http://arrow.unsw.edu.au/vital/access/manager/Repository/unsworks:512?start=346.
[199] Ibid, p 31, citing CSDC, *Background to the Formation of CSDC,* 2000 (not available).

The existing (1995) Commonwealth spatial data pricing policy …was developed at a time when a request to supply a particular dataset generally required an operator to access a data archive, build the dataset, copy it onto a tape or disk, and post it to the user. The cost of this service, some hundreds of dollars, was then charged to the user. This service model is rapidly being superseded by the Internet, where once an agency has made the data accessible through their website, the marginal cost of transfer is zero. Current limitations for very large spatial datasets will eventually be overcome by technological development.[200]

Commonwealth agencies adopted a range of pricing and access policies.[201] For example, AUSLIG supplied spatial data at the average cost of transfer, in accordance with the Commonwealth Spatial Data Transfer Policy. The cost included direct and indirect costs, including an estimate *pro rata* share of overhead costs in providing the distribution service. An account of the development in thinking on access and pricing policy from around 1995 to the early 2000s is provided by Rob Davies and Mary Rowlatt in their *Report on the ePSINet Visit to Australia (9 – 15 May 2004)*:

A 1995 PwC report drew attention to the benefits of a spatial data infrastructure approach and pointed to a 5:1 fiscal benefit ratio through introducing an open access/marginal costs regime. This is seen in Australia as perhaps the only robust assessment of the use of spatial information, given a perceived dearth of analysis elsewhere in the world.

Data had previously been distributed under license with fairly strict conditions (e.g. for use only within the organisation). Commercial value added meant paying royalties. At Federal level, the Australian Geological Survey Organisation had a cost recovery target of 20-30% and tried trying to sell value-added datasets back to industry. It was a subsidised organisation. Its view was that 'if no-one is prepared to buy, it's probably no good'. However, many organisations who could have used the data were being marginalised

This perception led to a debate about the open 'USA' models versus cost recovery. Improved data access and pricing was seen as one of the main issues. There was a strong Federal drive and industry argued for the USA 'model'. SME were being barred from entry, why should they pay for information twice?

AGS and ANZLIC, together with an Australian Consultancy (Centre for International Economics) reviewed the available cost-benefit studies and while not finding the evidence convincing, the principle of potential downstream benefits was accepted intuitively as a cause for action. Public sector cost recovery was recognised as a barrier to take-up. It was felt that benefits were too widely dispersed in most cases to be evaluated, although they could be established for sectors such as minerals or petroleum e.g. by increased exploration. A need was identified for specific case studies based on business cases within individual vertical sectors of spatial information

A Champion emerged: Andrew Clarke had worked in the USA and was instrumental in having a new spatial data access and pricing policy passed through Federal cabinet. This was opposed by many central agencies: no budget funding was involved.

By this time, AusLIG was receiving less than 10% of its revenue from cost recovery and this was falling anyway. It decided to forego this without seeking additional budget and to dispense, in effect, with its commercial activity. Industry was brought onside and made supportive of the public sector body.

The policy basis is that all Federal government spatial information should be available at the cost of distribution – defined as the marginal cost for hard copy and free on the Internet. Wherever possible it should be made available on the Internet as a priority. This policy has been implemented: mass produced CD products are sold at low cost, for example the price of a mineral exploitation data set was reduced from Aus$40,000 to

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[200] The report of the Commonwealth Interdepartmental Committee on Spatial Data Access and Pricing (June 2001) *A Proposal for a Commonwealth Policy on Spatial Data Access and Pricing*, p 3, available at http://www.osdm.gov.au/osdm/policy/accessPricing/SDAP.pdf.
[201] For a summary of the practices adopted by the Australian Bureau of Statistics (ABS), Australian Geological Survey Organisation (AGSO), Environment Australia, the Antarctic Division, the Bureau of Meteorology and the Australian Hydrographic Service, see *A Proposal for a Commonwealth Policy on Spatial Data Access and Pricing*, Attachment E at pp 52-53.

Aus$ 99 overnight.[202]

"Positioning for Growth – the Spatial Information Industry Action Agenda", Department of Industry Science and Resources, Australian Government (2001)

In September 2001, the Australian Government announced two Cabinet-supported initiatives designed to promote the development of Australia's spatial information industry: *Positioning for Growth – the Spatial Information Industry Action Agenda*[203] ("the SII Action Agenda") and the *Policy on Spatial Data Access and Pricing* (see below).

The SII Action Agenda "aimed to maximise the benefits derived from the application of spatial data, facilitate access to Australian Government spatial data, and support the growth of the spatial information industry."[204] Its objective was described as:

> to identify any opportunities and impediments to the progress of the industry and to develop a policy framework that will underpin growth through a commercially successful and internationally competitive Australian Spatial Information Industry.[205]

The report set out five goals for the spatial information industry, which were identified as being central to the future success of the industry and the means by which private business, academic and government sectors could work together to achieve "the Vision", that is, for Australia to be "a global leader in the innovative provision and use of spatial information".[206]

The five goals identified as central to the future success of the spatial information industry (SII) were:

- develop a Joint Policy Framework;
- improve Data Access and Pricing;
- increase Effective Research and Development;
- evaluate and Reform Education and Skills Formation; and
- develop Domestic and Global Markets.[207]

On the development of a joint policy framework, the SII Action Agenda states:

> For the industry to invest in its future with confidence, it must operate under a policy framework that encourages a mutually beneficial relationship between business and government. The strategy defined to reach this goal is to influence Commonwealth, State, Territory and local Governments to develop a policy framework that meets government objectives and allows businesses in the industry to prosper. This is particularly

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[202] Rob Davies and Mary Rowlatt, *Report on the ePSINet Visit to Australia (9 – 15 May 2004),* pp 9-10.

[203] Department of Industry, Science and Resources, *Positioning for Growth – the Spatial Information Industry Action Agenda,* September 2001, at http://www.anzlic.org.au/pubinfo/2358011765.html accessed 31 August 2008.

[204] Submission from the Australian Government Office of Spatial Data Management to the Victorian Parliament's Economic Development and Infrastructure Committee Inquiry into Improving Access to Victorian Public Sector Information and Data, Ben Searle, General Manager, OSDM, 2008, p 3.

[205] Australian Government Department of Industry Science and Resources, *Positioning for Growth – Spatial Information Industry Action Agenda*, September 2001, p 2 available at http://www.crcsi.com.au/uploads/publications/PUBLICATION_310.pdf.

[206] Ibid, p 6.

[207] Ibid, p 8.

important for the spatial information industry because of the large amount of fundamental data which is produced by government and the historically high level of public sector activity in the spatial industry.

A key initiative in this area is the formation of a single association to represent private business interests within the industry, to be known as the Australian Spatial Information Business Association (ASIBA). The success of this initiative is extremely important for the implementation of the Action Agenda. It will be largely up to ASIBA to represent business in implementing the joint actions with government and academia.

The creation of formal linkages between private industry and government will be an important part of reforming the policy framework, in particular the linkage between ASIBA and the Australia New Zealand Land Information Council (ANZLIC). These linkages are a prerequisite for the joint development of industry policy recommendations. Key policy issues are for:

- a clear definition of the roles of public and private sector activity in the provision of spatial information at all stages of the supply chain; and
- strengthening the private sector through industry development initiatives.[208]

In relation to improving data access and pricing, the SII Action Agenda stated:

The fundamental datasets provided by government are an essential factor of production for all spatial information businesses. The second goal is to increase the net economic benefit from the industry by maximising the use, distribution and creation of these publicly funded spatial information products and services.

The strategy identified by this Action Agenda is to encourage Commonwealth, State, Territory and local Governments to adopt data policies which increase the creation and use of public spatial information. To this end, an important recommendation of this Action Agenda is for business and government to develop jointly a common approach to spatial data access and pricing, and formulate a copyright policy that maximises the benefits to Australia. The industry considers that this will be achieved through the pricing of data at a maximum of the cost of distribution, with minimal copying and royalty restrictions.

The Action Agenda stresses that there must be recognition by all levels of government that spatial information is a component of fundamental economic infrastructure and that public spatial data provision must be funded accordingly. Improving business access to all public spatial information will be a key driver to the domestic growth of the industry, which in turn creates stronger enterprises, better positioned for expansion of their operations internationally.[209]

To maximise the use, distribution and creation of publicly funded data products and services, the SII Action Agenda proposed several Recommended Actions:

Recommended Actions:

6.1. Joint development by government and industry of a common approach to spatial data access, pricing and application of copyright policy in respect of the licensing of spatial information which maximises the benefits to Australia.

6.2. Commonwealth government to note strong industry support for the recommendations of the IDC on Spatial Data Access and Pricing, including pricing of data at a maximum of the cost of distribution and relaxation of copyright licence restrictions on the use of fundamental public spatial datasets.

6.3. Industry to develop a draft code of practice covering privacy issues.

6.4. A joint project by ASIBA, ANZLIC, ICSM and PSMA Australia to define and catalogue what are to be regarded as fundamental public datasets and make these available to agreed standards.

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[208] Ibid, p 8.
[209] Ibid, p 9.

6.5. Industry bodies to liaise with government to determine what is regarded as future public sector spatial information infrastructure versus private sector activity.

6.6. Recognition by all levels of government that spatial information is a component of fundamental economic infrastructure and that public data provision should be funded accordingly.

6.7. Reform of government pricing and access policies for the provision of spatial information should be considered as priority issues. Any need for additional funding should be considered in a Budget context.

6.8. Request ANZLIC to work with ASIBA to develop recommendations on ways to increase the efficiency of the collection of public spatial data across the nation.

6.9. The Commonwealth and States/Territories to work with industry to resolve outstanding business issues in implementing a national on-line fundamental spatial data delivery infrastructure.[210]

The SII Action Agenda addressed several impediments identified by the industry as "acknowledged barriers to growth in the industry", including "the restrictions on the use of publicly funded data through copyright and licence conditions imposed by government custodians."[211]

Copyright and licensing were dealt with at some length:

Government spatial information is licensed for use, not sold. Government agencies can control commercial exploitation by imposing copyright and other licence conditions. These licences usually grant the licensee a non-exclusive, non-transferable licence to use, reproduce, adapt and print the spatial information, and to combine it with other data held by the licensee. They also usually limit the free use of the data to personal use or use within the licensee's organisation. The commercial use of the data, or commercialising any product or service derived from the licensed spatial information, is usually prohibited unless permission to do so is granted by the government custodian of the data, and this may involve payment of licence fees or royalties to the custodian.

Commonwealth copyright is administered by InfoProducts, a part of the Department of Finance and Administration (Finance). The Commonwealth of Australia asserts its copyright in all published material produced by, or under the direction and control of, the Commonwealth. One of the fundamental principles followed by InfoProducts in the administration and protection of copyright in Commonwealth publications is:

The appreciation of political and departmental sensitivities to any proposed usage or restrictions on reproduction ensuring the Commonwealth receives an equitable share in revenue generated from commercial use of intellectual property owned by the taxpayer.

Imposition of these copyright and licensing conditions is seen by the spatial information industry as significantly impeding the exploitation of a publicly funded resource. One argument in favour of reviewing policy regarding the imposition of charging for copyright licences and imposing conditions in respect of spatial data is that spatial information has public good characteristics in that it is non-rival. Thus the intervention of government in restricting the use of these goods causes a significant market failure. The industry has often cited the situation in the United States as providing an ideal environment since their Copyright Act disallows the copyright of public works. Section 105 of the US Copyright Law states:

105. Subject matter of copyright: United States Government works

Copyright protection under this title is not available for any work of the United States Government, but the United States Government is not precluded from receiving and holding copyrights transferred to it by assignment, bequest, or otherwise.

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[210] Ibid, p 43.
[211] Ibid, p 44.

This policy has been a major catalyst for the private spatial information industry in the United States to grow and become a significant player in the global spatial information market.

The Australian spatial information industry suffers from not being able to leverage a public asset through maximising its use. The industry views government spatial information as a factor of production. The increased use of government spatial information will therefore generate a greater return to the taxpayer through higher industry growth and the ensuing uptake of spatial technologies by the general business community in Australia.

The Commonwealth IT/IP Guidelines, released on 8 February 2001 (available at http://www.dcita.gov.au/ip), provide some guidance to decisions regarding intellectual property (including copyright) in information products such as spatial information. Whilst relating mostly to IP in IT created under contract, the guidelines make some general comments. The guidelines note at paragraph 3.41 of the policy that, where possible, IT-related IP with market prospects should be available for commercialisation or exploitation by Australian firms. It also provides that distribution should be for the ultimate benefit of consumers; it should not be managed so as to promote anticompetitive behaviour or outcomes.

The industry strongly supports the relaxation of copyright restrictions on the use of fundamental spatial data provided by the public sector. The industry also considers that it is important that this be implemented without compromising the quantity and quality of these datasets. There are already examples of agencies which have relaxed restrictions on particular datasets, for example the QSIIS Business Environment Principles and the ACRES Licence Conditions for Landsat Data (see Box 6.2). The industry recommends that other government agencies review the need for restrictions on a case-by-case basis.

In some instances it will be appropriate for government to retain some control over secondary distribution of data and value-added products which use that data. One danger of a very liberal redistribution policy is that the ancestry of the data becomes unclear and it may be used for purposes for which it is not suited (for example, AUSLIG would not recommend using the 9 second DEM to support low-flying aircraft). Many agencies have put a lot of effort into comprehensively documenting data products and clearly indicating limitations and purposes for which products are not suited as well as those for which they are. One mechanism to try reduce the risk of inappropriate endues is to make it a condition of the original purchase that this 'metadata' must not be separated from the spatial data in any subsequent re-distribution (see for example, the AUSLIG licensing conditions for Landsat 7 redistribution in Box 6.2).

Australia is also subject to international agreements and conventions relating to some datasets, such as International Hydrographic Office restrictions on dissemination of hydrographic data, imposed to ensure that data integrity and quality are maintained. Privacy concerns are also potentially an important issue for the industry. Some sectors of the community may consider the maintenance of records by industry for customer relationship analysis to be an intrusion of privacy. Similarly the ability of location-based services to be used to monitor the activity of individuals raises potential privacy concerns. The industry can not afford to neglect these issues and should work to develop a code of practice covering privacy issues.

Action 6.1
Joint development by government and industry of a common approach to spatial data access, pricing and application of copyright policy in respect of the licensing of spatial information which maximises the benefits to Australia.

The industry considers that this will be achieved through pricing of data in line with the Productivity Commission's draft recommendations with minimal, or preferably no, copying and royalty restrictions.

Action 6.2
Commonwealth Government to note strong industry support for the recommendations of the IDC on Spatial Data Access and Pricing, including pricing of data at a maximum of the cost of distribution and relaxation of copyright license restrictions on the use of fundamental public spatial datasets.

Action 6.3

> *ASIBA, and other industry bodies as appropriate, to develop a draft code of practice addressing privacy issues.*[212]

"A Proposal for a Commonwealth Policy on Spatial Data Access and Pricing" (the OSDM Policy), Australian Government (2001)

Geoscience Australia, located within the Department of Industry, Tourism and Resources, was established in 1998 as Australia's national agency for geoscience research and geospatial information.[213] It absorbed the Commonwealth's national mapping division (formerly known as AUSLIG - the Australian Surveying and Land Information Group)[214] which was involved in land information issues at national and international levels. AUSLIG was the Commonwealth government's primary source of advice on land information matters, its functions encompassing the development and implementation of national land information policies, standards, and infrastructures, and the management of maritime boundaries, national mapping, geodesy programs, and remote sensing.[215]

CSDC members recognised the need for a whole-of-government binding approach, leading to the establishment by the Commonwealth government in July 2000 of the Interdepartmental Committee on Spatial Data Access and Pricing (IDC), chaired by the Department of Industry, Science and Resources (DISR). The IDC was established to address issues relating to pricing, access and licensing arrangements for Commonwealth spatial data. It was tasked with reporting to Cabinet on:

- a pricing and access policy for Commonwealth spatial data;
- the datasets to which the new policy should apply;
- the principles to be adopted in negotiating spatial data transfer arrangements with the State and Territories; and
- the administrative arrangements for implementing and managing the policy.[216]

The IDC's report, *A Proposal for a Commonwealth Policy on Spatial Data Access and Pricing* ("the *Proposal*")[217] was released in June 2001. The IDC described the background to its inquiry:

> Experience in delivering the National Land and Water Resources Audit has demonstrated the need for the Commonwealth, States and Territories to work together to develop national datasets. The Audit is providing spatial information to underpin the setting of priorities for natural resource management at scales from regional to Australia wide. Access to quality fundamental data is essential and provides the framework to enable assessment and the evolution of management options. Likewise, community based development of regional priorities, as called for under a range of Commonwealth initiatives, requires this improvement in Commonwealth policy.

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[212] Ibid, pp 51 – 54.

[213] Rob Davies and Mary Rowlatt (2004) *Report on ePSINet study visit to Australia*, 9-15 May 2004, p 7, available at www.epsiplus.net/content/download/391/2473/file/epsinet_australia_report.doc.

[214] Ibid.

[215] Renate Mason, *Developing Australian Spatial Data Policies – existing practices and future strategies,* PhD thesis, School of Geomatic Engineering, UNSW, 2000, p 37, available at http://www.library.unsw.edu.au/~thesis/adt-NUN/uploads/approved/adt-NUN20021106.165932/public/01front.pdf.

[216] The report of the Commonwealth Interdepartmental Committee on Spatial Data Access and Pricing (June 2001) *A Proposal for a Commonwealth Policy on Spatial Data Access and Pricing*, p 2, available at http://www.osdm.gov.au/osdm/policy/accessPricing/SDAP.pdf.

[217] Ibid.

ANZLIC is developing the Australia Spatial Data Infrastructure (ASDI) to facilitate access to and the use of fundamental spatial data produced by the various agencies (dataset custodians) in the States, Territories and Commonwealth. While ANZLIC has been successful in defining and developing the technical architecture of the ASDI, linking the various jurisdiction systems, it has not been able to develop a national spatial data pricing policy. Most of the States and Territories have now developed whole-of-government spatial data pricing policies, defining pricing (cost recovery) and licence (copyright protection) conditions for their data. The current Commonwealth policy was developed in 1995, but has limited scope and has not been applied in a consistent manner. The Commonwealth is now lagging most of the States and Territories in its coordination of spatial data policy, and some agencies are being criticized by users over their spatial data pricing and licensing arrangements.[218]

The *Proposal*, which was influenced by the Productivity Commission's *Inquiry into Cost Recovery by Commonwealth Agencies,* "sought to reposition the spatial information industry by removing impediments to industry growth and participation in the global information economy".[219] The *Proposal* sought to:

[b]enefit the Australian community through improved access to the government's spatial data … based on the premise that spatial data is an asset that, if accessible, can deliver economic and social benefits far exceeding the direct financial returns of cost recovery.[220]

In explaining the importance of spatial data, the IDC said:

Fundamental spatial data may … be considered as an information infrastructure. A good example of a fundamental spatial dataset is the road network. Digital road data are used in transport, environment, social, economic and many other GIS applications. There are obvious benefits in single authoritative versions of such datasets being available to the community.[221]

The IDC set out its guiding "Policy Principles" as follows:

Early in its deliberations, the IDC adopted the basic principle that the new Commonwealth spatial data access and pricing policy should seek to maximize the net benefits to the community. The Commonwealth's spatial data holdings are an asset that, if made more accessible, can deliver economic and social benefits far exceeding the direct financial returns of higher levels of cost recovery. This view is confirmed by the experience of Australian agencies which have reduced their prices, and the emergence of a competitive spatial data value-adding industry in the USA. It is also supported by the recommendations of both the Spatial Information Industry Action Agenda and the Productivity Commission.

The other basic principle adopted by the IDCD relates to online services. Under the Government Online initiative, all appropriate Government services are required to be delivered online and a series of customer-focused portals are being developed. The supply of digital spatial data to the community is certainly an appropriate service for online delivery, and can be structured to provide online mapping capabilities to various Commonwealth portals.[222]

The IDC called on the Commonwealth to take the following steps:

1. Provide fundamental spatial data free of charge over the Internet, and at no more than the marginal cost of

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[218] Ibid, p 2.
[219] Submission from the Australian Government Office of Spatial Data Management to the Victorian Parliament's Economic Development and Infrastructure Committee Inquiry into Improving Access to Victorian Public Sector Information and Data, Ben Searle, General Manager, OSDM, 2008, pp 2-3.
[220] Ibid, p 3.
[221] *A Proposal for a Commonwealth Policy on Spatial Data Access and Pricing*, pp 1-2, available at http://www.osdm.gov.au/osdm/policy/accessPricing/SDAP.pdf.
[222] Ibid, pp 2-3.

transfer for packaged products and full cost of transfer for customised services, without any copyright licence restrictions on commercial value-adding. Fundamental spatial datasets, and their current and planned availability over the Internet, will be identified in a public schedule.

2. Develop an Internet-based public access system, within the framework of the Australian Spatial Data Infrastructure. Agencies will be responsible for maintaining their own data access and management systems, but must comply with an agreed set of standards which support the Australian Spatial Data Directory and a single Commonwealth entry point. This system should be developed to provide spatial content to all Commonwealth portals.

3. Negotiate a multilateral agreement with the State and Territories for access to spatial datasets required for Commonwealth purposes. The agreement should provide for reciprocal pricing (free over the Internet, marginal cost of transfer otherwise), but require Commonwealth agencies to obtain the permission of State/Territory data custodians for any data transfer or licensing to a third party.

4. Replace the Commonwealth Spatial Data Committee with a new administrative structure, comprising an executive policy group, a management committee, and a new Office of Spatial Data Management. This structure will be responsible for managing the implementation of the new access and pricing policies.[223]

The IDC proposed the following Principles to support the Policy:

Community Access

All sectors of the community have a right to easy, efficient and equitable access to government information under conditions that ensure that technology, data formats, institutional arrangements, location, costs and conditions do not inhibit their use.

Access and pricing arrangements must support the objectives of the Commonwealth in relation to online service delivery.

Exchange of Data

This Policy encourages the two-way exchange of spatial data between Commonwealth departments and agencies.

The Commonwealth must be able to enter into whole-of-government, multi-lateral arrangements with State and Territory governments, for the exchange of spatial data to maximise mutual benefit.

Net Benefits

Pricing decisions must be based on maximising net benefits to the community arising from better decision making and ready community access to quality spatial data.

Efficiency of Commonwealth Spatial Data programs

To maximise the efficiency and effectiveness of the Commonwealth's investment in spatial data, it is necessary to adopt a whole-of-government approach to sharing data and avoidance of duplication of effort and expenditure.

Uniformity and Consistency

The efficiency and effectiveness of the Commonwealth's investment in spatial data is increased when data conforms to common standards and there is a consistent approach to access and pricing across all government agencies.

Copyright and Use

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[223] Ibid, p 1.

The Commonwealth Government will retain copyright in any spatial dataset that is made available to another party, even if no licence fees or royalties are sought, and even if the other party is extended very liberal rights in the use of the data. Commonwealth copyright should be explicitly noted in relation to the making available of datasets.

Data Licence

All provision of spatial data under this Policy shall be accompanied by a licence clearly setting out the conditions under which the data may be used, the rights and responsibilities of the data provider, and the rights and responsibilities of the data receiver.

The licence will require the user to acknowledge that copyright over the fundamental data is vested in the Commonwealth and to absolve the Commonwealth from any liability arising out of the subsequent use of the data or a product developed from the data, and should seek to encourage accuracy in reproduction. The licence should also require licensees to report their value-adding activity to enable the Government to assess the effectiveness of the Policy.

Custodianship

Agencies must adopt best practices in managing data and must follow the principles of custodianship established by ANZLIC.

Standards

Fundamental spatial data must conform to international and national standards, as identified by the CSDMG.

Industry Development

Access and pricing arrangements must facilitate development of an innovative and competitive spatial information industry in Australia.

Rights and Obligations

The rights of the individual and the Commonwealth in relation to confidentiality, privacy, security and intellectual property must be preserved.

Government legislation and Australia's international obligations must be complied with.

International Initiatives

Access and pricing arrangements shall facilitate participation in international activities that further Australia's national interest.[224]

The IDC's *Proposal* sought to maximise the benefits to the community from increased access to and use of spatial data and to ensure that digital spatial data was readily available to the community, ideally over the internet. On the issue of pricing, the IDC stated:

> [A]ll fundamental spatial data should be freely available at no more than marginal cost of transfer in order to maximise the net economic and social benefits arising from its use. As user requirements and technology trends converge, all agencies will make fundamental spatial data available through their web sites. This is consistent with the … Access Policy and the broader Government On-line initiatives. As datasets become accessible over the Internet, the marginal cost of transfer approaches zero. Therefore, all fundamental spatial data will eventually be made available free of charge.

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[224] Ibid, pp 9-10.

The cost of providing fundamental spatial data as packaged products (eg CDs) or customised products (eg significant staff time to generate) is a legitimate charge to users – hence the proposal that these be made available at a price not exceeding the marginal cost or full cost of transfer, respectively. However, data accessed through these mechanisms will also be available free over the Internet, as each agency develops this capability.

The cost of implementing the technology may be regarded as a sunk cost.

Further, the IDC proposes that custodians waive all royalties for commercial/VAR [value added resale] use of fundamental spatial data as this will not only maximise net economic benefit but also minimise transaction costs.

The ability of custodian agencies to make fundamental spatial data freely accessible online is restricted only by the investment in technology and access streams. The IDC believes that Government should invest in the necessary technology to accelerate the move to free, online data and to maximum benefits.[225]

The IDC proposed the following principles as the basis for spatial data access, re-use and pricing:

- custodians of fundamental spatial data will make that data freely available through the Internet at no cost, as soon as appropriate technology becomes available within the custodian agency;
- fundamental spatial data distributed as packaged products [e.g. CDs] will be made available at a price not exceeding the marginal cost of transfer;
- fundamental spatial data distributed as customised products [e.g. significant staff time and other resources to generate] will be made available at a price not exceeding the full cost of transfer; and
- there will be no restrictions on commercial use or value-added activities related to fundamental spatial data, as defined in the Schedule to the Policy, although copyright may be reserved by the Commonwealth.

The cost of providing fundamental spatial data as packaged products (eg CDs) or customised products (eg significant staff time to generate) is a legitimate charge to users – hence these will be made available at a price not exceeding marginal cost or full cost of transfer, respectively. However, data accessed through these mechanisms will also be available free over the Internet, as each agency develops this capability.[226]

The IDC recommended that, to implement its *Proposal*, the existing Commonwealth Spatial Data Committee (CSDC), which had been established in 1992, should be replaced by a stronger and better resourced institutional structure consisting of:

- a Commonwealth Office of Spatial Data Management (OSDM);
- a Commonwealth Spatial Data Policy Executive, with membership at the CEO level and directing the activities of a Commonwealth Spatial Data Management Group; and
- a Commonwealth Spatial Data Management Group, with membership at the Senior Executive level, supported by the OSDM.[227]

An important aspect of OSDM's role as envisaged by the IDC was the development of a "standard set of data licences that will promote consistency in dealings with external users and help preserve the Commonwealth's interest in the data".[228]

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[225] The report of the Commonwealth Interdepartmental Committee on Spatial Data Access and Pricing (June 2001) *A Proposal for a Commonwealth Policy on Spatial Data Access and Pricing*, pp 13-14, available at http://www.osdm.gov.au/OSDM/Policies+and+Guidelines/Spatial+Data+Access+and+Pricing/default.aspx.
[226] Ibid, pp 13-14 and 25.
[227] Ibid, p 17.
[228] Ibid, p 17.

On 25 September 2001, at the same time as launching *Positioning for Growth – the Spatial Information Industry Action Agenda,*[229] the Australian Government accepted the IDC's *Proposal.*[230] Effectively, upon acceptance, the IDC's *Proposal* became the Australian Government's *Policy on Spatial Data Access and Pricing* ("the OSDM Policy").[231]

Following adoption of the OSDM Policy, the Office of Spatial Data Management (OSDM) was established in 2001. OSDM has a lead responsibility for implementation of whole-of-government spatial data policy, including the ASDI and the OSDM Policy.[232] It facilitates and coordinates spatial data management across Australian government agencies. A recent description of OSDM's functions is as follows:

> OSDM:
> - provides administrative support to the Spatial Data Policy Executive (SDPE) and the Spatial Data Management Group (SDMG);
> - implements the work plan and manages the working groups established by SDMG;
> - facilitates sharing of experience and expertise between Australian Government agencies;
> - provides technical advice to the SDMG;
> - promotes efficient use of Australian Government spatial data assets;
> - represents the Australian Government's interests in spatial data coordination and access arrangements with the States and Territories;
> - fosters the development of a private sector spatial information industry.[233]

Geoscience Australia provides administrative and technical support to OSDM, including accommodation, personnel services and information technology support; it funds four OSDM staff. Some support is also provided to OSDM from time to time by other agencies represented in the Spatial Data Policy Executive (SDPE).[234] The administrative arrangements put in place with the formation of the OSDM replaced the Commonwealth Spatial Data Committee (CSDC).

The OSDM Policy seeks to:

> maximise benefits to the community from increased access to and use of spatial data; and [ensure] that the

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[229] Department of Industry, Science and Resources, *Positioning for Growth – the Spatial Information Industry Action Agenda,* September 2001, at http://www.anzlic.org.au/pubinfo/2358011765.html accessed 31 August 2008.

[230] The *Policy on Spatial Data Access and Pricing* was launched by Senator Nick Minchin on 25 September 2001.

[231] See Australian Government Office of Spatial Data Management, Spatial Data Access and Pricing (webpage) http://www.osdm.gov.au/OSDM/Policies+and+Guidelines/Spatial+Data+Access+and+Pricing/default.aspx accessed on 4 July 2008; See also Australian Government Geoscience Australia, Commonwealth Spatial Data Policy Executive – incorporating Office of Spatial Data Management (webpage) http://www.ga.gov.au/nmd/asdi/osdm.jsp accessed on 4 July 2008.

[232] Mathew Warnest, *A Collaboration Model for National Spatial Data Infrastructure in Federated Countries,* PhD Thesis, Department of Geomatics, Melbourne University, 2005, p 103.

[233] Submission from the Australian Government Office of Spatial Data Management to the Victorian Parliament's Economic Development and Infrastructure Committee Inquiry into Improving Access to Victorian Public Sector Information and Data, Ben Searle, General Manager, OSDM, 2008, p 2. Note that description is consistent with the envisaged role for OSDM as described in the report of the Commonwealth Interdepartmental Committee on Spatial Data Access and Pricing (June 2001) *A Proposal for a Commonwealth Policy on Spatial Data Access and Pricing*, pp 48-49, available at http://www.osdm.gov.au/OSDM/Policies+and+Guidelines/Spatial+Data+Access+and+Pricing/default.aspx.

[234] Submission from the Australian Government Office of Spatial Data Management to the Victorian Parliament's Economic Development and Infrastructure Committee Inquiry into Improving Access to Victorian Public Sector Information and Data, Ben Searle, General Manager, OSDM, 2008, pp 2-3.

> supply of digital spatial data to the community be readily available, ideally over the internet.[235]

It applies to the spatial datasets listed in the Schedule of Australian Government Spatial Data ("the Schedule").[236] Additional spatial datasets are available under generally similar conditions to those datasets listed in the Schedule. However, as the conditions on which these datasets can be distributed do not comply fully with the OSDM Policy, these datasets are listed separately in the Auxiliary List.[237] OSDM maintains the Schedule and Auxiliary List under the guidance of the Schedule Working Group (SWG), which reports to the Commonwealth Spatial Data Management Group (CSDMG).[238]

Schedule of Australian Government Spatial Data

The Schedule of Australian Government Spatial Data ("the Schedule")[239] is a single authoritative source of information about spatial datasets available under the terms of the OSDM Policy. Datasets listed in the Schedule are available free online, at no more than the marginal cost of transfer for a packaged product (nominally $99), or the full cost of transfer for a customised service.

Spatial datasets eligible for listing in the Schedule must meet certain conditions, including that:

- the data is available at the marginal cost of transfer (e.g. free over the Internet or nominally $99 for a packaged product);
- a metadata record must accompany the spatial data;[240]
- the spatial data is free of restrictions on value-adding or third party transfer;
- intellectual property is vested in the Commonwealth; and
- the data is distributed under a licence (such as the OSDM Licence)[241] that acknowledges Commonwealth intellectual property and absolves the Commonwealth from any liability.[242]

Core criteria for inclusion of datasets in the Schedule are that they do not contain any third party

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[235]See OSDM website at http://www.osdm.gov.au/OSDM/Policies+and+Guidelines/Spatial+Data+Access+and+Pricing/default.aspx.

[236] Accessible at http://spatial.osdm.gov.au/schedule/schedule_search.jsp accessed 22 August 2008. This was originally published in the *Commonwealth Spatial Data Policy Executive Annual Report 2001-02*, Appendix C, pp 55-57, available at http://www.osdm.gov.au/Publications/Annual+Reports/Annual+Report+2001-2002/default.aspx.

[237] See Australian Government Office of Spatial Data Management, The Schedule and Auxiliary Lists (webpage) http://www.osdm.gov.au/OSDM/Policies+and+Guidelines/Spatial+Data+Access+and+Pricing/The+Schedule+and+Auxiliary+Lists/default.aspx accessed on 4 July 2008.

[238] Australian Government Office of Spatial Data Management, The Schedule and Auxiliary Lists (webpage) http://www.osdm.gov.au/OSDM/Policies+and+Guidelines/Spatial+Data+Access+and+Pricing/The+Schedule+and+Auxiliary+Lists/default.aspx accessed on 4 July 2008.

[239] The Schedule is discussed further below. It is accessible at http://spatial.osdm.gov.au/schedule/schedule_search.jsp accessed 22 August 2008.

[240] All the datasets subject to the OSDM Policy must have a metadata record, and that metadata must be made available at no cost. The metadata must be registered on the Australian Spatial Data Directory (ASDD) and all transfers of the datasets identified in the Schedule are to be accompanied by current metadata.

[241]See http://www.osdm.gov.au/OSDM/Policies+and+Guidelines/Spatial+Data+Access+and+Pricing/OSDM+Licence/default.aspx.

[242] Australian Government Office of Spatial Data Management, The Schedule and Auxiliary Lists (webpage) http://www.osdm.gov.au/OSDM/Policies+and+Guidelines/Spatial+Data+Access+and+Pricing/The+Schedule+and+Auxiliary+Lists/default.aspx accessed on 4 July 2008.

copyright material (even where the Commonwealth has secured by agreement or licence all legal rights required to be able to license the third party material as part of another dataset) and that the spatial data is not subject to any restrictions on value-adding or third party transfer. This is a key point of differentiation between the Schedule and the Auxiliary List.

Upon its formation, the CSDMG established a Working Group to examine the adequacy of the Schedule and whether changes should be made to it. The Working Group's proposal that a further 44 datasets should be added to the Schedule was endorsed by the CSDMG, which recommended them for approval by the Commonwealth Spatial Data Policy Executive (CSDPE). On 4 July 2002, the CSDPE approved the listing of these datasets, leading to a 50% increase in the number of datasets included in the Schedule. The expanded Schedule took effect in the 2002-03 financial year.[243] At this time there were 400 to 500 datasets on the Schedule. By July 2008, the number of datasets lists on the Schedule had grown to more than 1,500.[244] Following adoption of the OSDM Policy there was a very rapid increase in the rate of access to spatial datasets, rising from around 50,000 accesses in the first year to over 1.5 million by 2005.[245]

Geoscience Australia

Geoscience Australia (GA) offers free downloads of geospatial data from its website, based on the OSDM Policy.[246] GA has been an "early adopter" of Creative Commons licensing. GA's website states that in beginning to make various important information products available online under Creative Commons (CC) licences in October 2008, it became the first Australian government agency to adopt this form of open content licensing.[247] Earlier in 2008, in response to requests for a simplified process for gaining access to key GA mapping, satellite and other information products, together with clearer and more transparent statements about the rights of reuse, GA undertook a detailed analysis and internal trial of Creative Commons (CC) licences on a representative sample of its information products to see if open content licensing would deliver the desired operational outcomes.[248]

In October 2008, upon completion of the analysis and successful completion of the CC licensing trial, GA posted on its website the following statement, recording the significance of its decision to apply CC licences to various key mapping and other information products:[249]

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[243] Commonwealth Office of Spatial Data Management, Commonwealth Spatial Data Policy Executive Annual Report 2001-02, p 2, available at http://www.osdm.gov.au/Publications/Annual+Reports/Annual+Report+2001-2002/default.aspx. A list of the newly listed datasets and their custodians is provided in Appendix D at p 58.

[244] Submission from the Australian Government Office of Spatial Data Management to the Victorian Parliament's Economic Development and Infrastructure Committee Inquiry into Improving Access to Victorian Public Sector Information and Data, Ben Searle, General Manager, OSDM, 2008, p 4.

[245] Ibid, p 4.

[246] See https://www.ga.gov.au/products/servlet/controller?event=DEFINE_PRODUCTS accessed on 22 May 2009.

[247] See http://www.ga.gov.au/news/archive/2008/dec/. GA was two months ahead of ABS in its implementation which took place in December 2008. Nevertheless to date ABS has applied the CC licences to a greater number of information products than GA.

[248] Outlined in the presentation by Jeff Kingwell, Head, Project Management Office, Information Services Branch, Geoscience Australia at the Open Access and Research Conference, hosted by the Open Access to Knowledge Project (OAK Law), in Brisbane in September 2008. See http://www.oaklaw.qut.edu.au/node/61 for the powerpoint slides. The analysis included the taking of legal advice on implementation.

[249] See entry "New product licence improves customer access" at http://www.ga.gov.au/news/archive/2008/dec/. The GA website is provided through a partnership of Geoscience Australia, the Department of Resources, Energy and

New product licence improves customer access

Visitors to our website will find it easier to use and access information in future through the adoption of the Creative Commons licence.[250]

These licences are easy to understand, royalty-free, modular, off the shelf licences which have been customised for the legal codes of more than 50 countries, including Australia.

Geoscience Australia is the first Australian Government agency to implement the licence, which is being considered also by the Queensland and Victorian Governments, Australian Bureau of Statistics, the Bureau of Meteorology and others.

Among the products available through the Geoscience Australia website with Creative Commons licences are MODIS[251] data and the Australian Mines Atlas.[252]

Other material to be issued shortly under Creative Commons licences includes the GeoMAP 250K product, digitised BMR records and educational material about tsunami.

Adoption of the licences has been made in response to requests from clients for the use and re-use of Geoscience Australia data to be simplified and made more transparent.

As it [is] adopted by other organisations, the Creative Commons licence is expected to make it easier for users to merge spatial and geoscientific data obtained from different sources. [emphasis added]

GA has generally applied the CC-BY (Attribution) licence, the least restrictive of the CC licences to its information products. As in the case of ABS, selection by GA of the CC-BY licence is designed to assist in realising the potential of the information products by enabling "mash ups", including the layering together of different information products. With GA this includes the merging of spatial and geoscientific data from different sources. In the case of ABS it is the merging of different information with statistical information. Additional GA information products will progressively be made available under the CC licences.[253]

Tourism and the Minerals Council of Australia.

[250] Generally, the Creative Commons (CC-BY or Attribution licence), the least restrictive of the six Creative Commons licences.

[251] The GA website indicates the strategic importance of the satellite based MODIS to global change modelling in the following terms:

> Moderate Resolution Imaging Spectroradiometer (MODIS) is the key instrument aboard the satellites Terra (EOS AM-1), launched on 18 December 1999, and Aqua (EOS PM-1), launched on 4 May 2002. MODIS views almost the entire surface of the Earth every day, acquiring data in 36 spectral bands over a 2330 km swath.
>
> MODIS data will improve the understanding of global dynamics and processes occurring on the land, in the oceans, and in the lower atmosphere. MODIS is playing a vital role in the development of validated, global, interactive Earth system models able to predict global change accurately enough to assist policy makers in making sound decisions concerning the protection of our environment.

[252] See the atlas of mineral resources, mines and processing centres (the Australian Mines Atlas) at http://www.australianminesatlas.gov.au/. In the interactive map section of the website users are informed that they can:

> Create a map showing Australia's mines. You can use the Quick Search tool to locate a mine by name, or for more in-depth research, the Advanced Search tool has a wider selection of search options. The mapping application also allows you to view points in Google Earth and print maps in PDF format.

[253] For information products available under CC licences through the GA website, see for example http://www.ga.gov.au/news/archive/2008/dec/ and http://www.ga.gov.au/download/nmd_download/. See, for example, the Landsat 7 Picture Mosaic of Australia, MODIS satellite data and NOAA satellite data made available at http://www.ga.gov.au/download/nmd_download/ under the Creative Commons Attribution (MODIS) licence (see http://www.ga.gov.au/image_cache/GA12434.pdf).

Australian Bureau of Statistics

In November 2005, the Australian Bureau of Statistics (ABS) abandoned the restrictive licensing practices it had previously applied in licensing its datasets, which had involved charging fees for access to data and the restriction or prohibition of commercial downstream use by the licensee and/or others. Since then the ABS has eliminated virtually all charges for data and restrictions on downstream use of their data (that is, both access and reuse), whether commercial or otherwise. Since December 2008, ABS statistical information products have been available online through their website under a Creative Commons (CC-BY or Attribution licence), the least restrictive of the six Creative Commons licences.[254] As a result the level of usage of ABS materials has greatly increased.

"Informing the Nation – Open Access to Statistical Information in Australia", Siu-Ming Tam, Australian Bureau of Statistics (2009)

Siu-Ming Tam, First Assistant Statistician[255] in the Australian Bureau of Statistics (ABS) presented the paper, "Informing the Nation – Open Access to Statistical Information in Australia", to a worksession convened by the Statistical Division of the United Nations Economic Commission for Europe (UNECE) in Warsaw from 13 – 15 May 2009.[256]

The paper outlines the sequence of funding, economic and information policy and practice developments leading up to the current position whereby ABS's statistical information products are available online on a no-charge basis and under a Creative Commons (CC-BY: Attribution) licence. This outcome is designed to assist in realising the potential of the ABS statistics by facilitating enhanced and innovative re-use such as through "mash ups" in which statistics are able to be combined with other layers of information.

The Executive summary states:

> …
> 3. In 2005, the Australian Government released cost recovery guidelines in order to "heighten the transparency, consistency and accountability of cost recovery by Government agencies". The new guidelines require fees and charges set by Government agencies to reflect the costs of producing and providing the products and services. In addition, where Government agencies produce products or services in direct competition with private sector providers, the guidelines require that the prices be set to reflect commercial costs and to ensure that the Australian Government's Competitive Neutrality principle be observed.
>
> 4. Following a comprehensive review of the then ABS charging practice against the Government guidelines, the ABS fine tuned its charging policy. ABS statistics are now divided into:
>
> • A Basic Information Set (BIS), which includes an extensive range of statistics for the wider Australia community. The BIS is funded by taxpayers and provided free of charge.

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[254] The six Creative Commons licences are described later in this chapter.

[255] Integrated Collection and Dissemination Division, Australian Bureau of Statistics

[256] Siu-Ming Tam, *Informing the Nation – Open Access to Statistical Information in Australia,* Statistical Journal of the IAOS: Journal of the International Association for Official Statistics (IAOS), Vol.25, No.3-4, pp 145-153, 2008, available at http://iospress.metapress.com/content/06h2q22084lp1v31/?p=5c06202d5bdd43d7921a2dd63cb08714&pi=7 The paper is also available at http://www.unece.org/stats/documents/ece/ces/ge.45/2009/wp.11.e.pdf and the presentation slides can be downloaded at http://www.unece.org/stats/documents/ece/ces/ge.45/2009/wp.11.e.ppt. For a summary, see the ePSI Platform at http://www.epsiplus.net/news/psi_pricing_policy2.

- An Additional Information Set (AIS) that comprises the ABS Supplementary Information Set (SIS) and Commercial Information Set (CIS). Pricing for the SIS is based on full cost recovery, and pricing for the CIS follows the Competitive Neutrality Principle.

5. In response to community expectations, and aspiring to expand the content of the BIS, in June 2005 the ABS sought and obtained additional funding from the Australian Government for free access to ABS publications on its website. In December 2005, the Minister made the announcement, in an event to mark the centenary for the establishment of the ABS, that as a centenary tribute to the people of Australia, all ABS statistical output on the web site would be made free of charge.

6. The recent advent of Web 2.0 technologies increases the potential to use, share and 'mix and match' ABS data sets to add value to ABS information. 'Mash ups' are an excellent example of how the value of a product may be significantly enhanced by including different layers of information with statistical information. To facilitate this, and other innovative uses of ABS data, the ABS needs to have an internationally recognised licensing framework for accessing, using and reusing its statistical information.

7. In December 2008, ABS introduced Creative Commons licensing by adopting the Attribution 2.5 Australia licence for its materials contained in the ABS website."

Bureau of Meteorology

Under the *Water Act* 2007 (Cth) the role of the Bureau of Meteorology (BoM) *w*as expanded to include management of water information, with the establishment of the Australian Water Resources Information System (AWRIS).[257] The Bureau is now empowered to collect water information from a range of sources in order to publish a National Water Account and periodic reports on water resource use and availability. A major outcome of BoM's work will be increased transparency, confidence and understanding of water information on a national level.

The strategic issues of access to water information and the need for a legal and operational framework for the sharing of this data across the various Australian jurisdictions were the subject of an Agenda Paper entitled "Water Information and the Bureau of Meteorology's Role", presented to the meeting of the National Water Initiative Committee held in Canberra on 1 August 2007.[258] The Agenda Paper recommended that agreement be reached on steps to overcome existing operational challenges. Specifically, the Agenda Paper proposed that the Bureau of Meteorology and the Queensland Department of Natural Resources and Water (DNRW) would investigate the use of Creative Commons licensing and report their findings to the Natural Resource Management Ministerial Council in November 2007.

The background to the Agenda Paper noted that the Bureau of Meteorology had advised that the Creative Commons licensing framework appeared to align with the requirement for a mechanism to deal with licensing issues associated with water data sharing under the water information management arrangements proposed by the Commonwealth. It further noted that Queensland DNRW had proposed a project to develop a whole-of-Government Water Information Licensing Framework (WILF), consisting of a standard set of open content (Creative Commons) and closed content (restrictive) licences to cover all water information transactions.

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[257] http://www.bom.gov.au/waterjobs/awris.htm.
[258] The original document is not available online, but for a related document see: the national Resource Management Ministerial Council, Record and Resolution, Thirteenth Meeting, Melbourne, 18 April 2008, www.mincos.gov.au/__data/assets/pdf.../nrmmc-13-long-resols.pdf.

Bureau of Meteorology Submission to Victorian Parliament's Economic Development and Infrastructure Committee (2008)

BoM's position on and progress in relation to access to and the licensing of information and data is contained in its submission (August 2008) to the Victorian Parliament's Economic Development and Infrastructure Committee's inquiry into "Improving Access to Victorian Public Sector Information and Data".[259]

In relation to the Committee's terms of reference part (b) - "Consider whether the use of open source and open content licensing models, including Creative Commons, would enhance the discovery, access and use of Government information", BoM's submission under the heading "Bureau of Meteorology Approach to Licensing" was as follows:

25. The Bureau has been reviewing its current licensing arrangements and giving consideration to the application of open content licensing models, including Creative Commons. It is considered that such arrangements might better reflect the agency's mandate and attitudes to the provision of its public interest information and data for the benefit of the Australian community.

26. At present, the Bureau has formal licensing procedures in place for most of its cost-recovery products and services, and for secondary distributors, in the form of a written Access Agreement. All information on the Bureau web site contains a copyright statement and incorporates a link to the Bureau's copyright notice. However as new products and services become available and new technology opens up new and innovative ways of working, these arrangements must evolve. A more robust and transparent licensing scheme needs to be developed to reflect both the specific characteristics of Bureau products and modern mechanisms of data exchange and use.

27. The Creative Commons licensing framework provides a method, based on copyright law, of making data and information freely available while retaining some rights for the data owners and licensors. Use of Creative Commons licensing is increasing world-wide and its use by government agencies for data sharing is also becoming more common. This "open content" approach to licensing is gaining favour as it maximises the social benefits of public information, encourages the use and reuse of data and information, and provides a simpler, legally robust licensing framework replacing existing data sharing arrangements which are often complex, expensive to administer, unresponsive to user needs, or legally untested.

28. In Australia , the Working Group on Data for Science report to the Prime Minister's Science, Engineering and Innovation Council (PMSEIC) in December 2006 includes a recommendation that "the principle of open equitable access to publicly-funded scientific data be adopted wherever possible and that this principle be taken into consideration in the development of data for science policy and programmes", while a report on the open access to public sector information (PSI) summit held in July 2007 concludes that "a broad consensus emerged in favour of the benefits to be derived from government implementing an open access policy … and the use of Creative Commons (CC) open content licences for the majority of PSI which is unaffected by privacy or other restricting factors".

29. The Water Regulations associated with the Water Act came into force on 30 June 2008 and Bureau staff are currently working with State and Territory water agencies to ensure the smooth provision of water information. The Bureau is actively seeking support from States and Territory jurisdictions for the use of a Creative Commons framework and has recently written to all Departments of Premier and Cabinet alerting them to the

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[259] See *Inquiry into Improving Access to Victorian Public Sector Information and Data: Submission by the Bureau of Meteorology*, 18 August 2008, available at http://www.parliament.vic.gov.au/edic/inquiries/access_to_PSI/submissions/PSI_Sub_17_Bureau_Meteorology.pdf accessed on 23 July 2009. See also the oral submission by Dr L Minty, Assistant Director, Water Analysis and Reporting, Water Division, Bureau of Meteorology, available at http://www.parliament.vic.gov.au/edic/inquiries/access_to_PSI/transcripts/EDIC_080908_BOM.pdf accessed on 23 July 2009.

Bureau's intention to use Creative Commons Attribution as the licensing regime for water data.[260]

With the objective of providing enhanced access to and reuse of water data, BoM is working through a variety of issues with the numerous parties required to provide water data to BoM under the *Water Act 2007*.[261] BoM, in carrying out its new role of water information management, has strongly supported use of the CC licences, and the CC-BY licence in particular, within the new Australian Water Resource Information System (AWRIS).[262] The BoM website currently shows a draft Modernisation and Extension of Hydrologic Monitoring Systems Program Funding Deed 2009-2010.[263]

"Creative Commons Licensing", Item Paper by the Australian Bureau of Meteorology for the Jurisdictional Reference Group on Water Information (JRGWI), (2009)

In mid-2009, BoM prepared an Item Paper entitled "Creative Commons Licensing" outlining its support for and intention to implement Creative Commons licensing, for consideration by the 6th meeting of the Jurisdictional Reference Group on Water Information (JRGWI)[264] held in Melbourne

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[260] Ibid, see www.parliament.vic.gov.au/edic/inquiries/access_to_PSI/submissions/PSI_Sub_17_Bureau_Meteorology.pdf.

[261] *Water Regulations 2008,* which commenced on 30 June 2008, individually names over 200 persons who are required to give BoM specified water information that is in their possession, custody or control.

[262] See http://www.bom.gov.au/waterjobs/awris.htm. BoM produced an Agenda Item paper on "Creative Commons Licensing" for the 6th Meeting (23-24 July 2009) of the Jurisdictional Reference Group on Water Information (JRGWI**),** established under the *Water Regulations 2008*. The Paper outlines BoM's plan to implement support for CC licensing within AWRIS. BoM intends to make this Paper available through its website (http://www.bom.gov.au/) later this year (October 2009).

[263] See http://www.bom.gov.au/water/documents/funding_program/060509_FUNDING_DEED.pdf and http://www.bom.gov.au/water/documents/funding_program/Funding_Deed_2_09-04-17.pdf accessed 23 July 2009. This draft agreement appears to be designed to be used where the Bureau of Meteorology (BoM) is providing funds to the recipient as part of BoM's commitment under the *Water Act 2007* (Cth) to the modernisation and extension of hydrologic monitoring systems program (see Recitals C and D). The objective of the Program is "to provide Funding to persons listed in the Water Regulations (see www.bom.gov.au/water) to modernise and extend their stream flow, groundwater monitoring and water storage measurement networks, enhancing their accuracy and permitting real-time data transfer to the internet." The main intention of clauses 12.7.1 and 12.7.2 appears to be to enable BoM to make water information, provided to BoM by the recipient (to be under a CC–BY licence), available to others through the BoM website and also to authorise BoM to apply a CC- BY (attribution licence) as part of the operation of its website.

[264] The following account of the Jurisdictional Reference Group on Water Information (JRGWI) appears in the Explanatory Statement to the Water Regulations 2008 under the *Water Act 2007*:

The Jurisdictional Reference Group on Water Information (JRGWI) is made up of two representatives from each of the state and territory governments. JRGWI plays a key role in bringing together the national water information activities of the Bureau with the regional water information activities undertaken by the states and territories. JRGWI membership is by invitation of the Director of Meteorology, based on the recommendations of the Department of Premier and Cabinet (or equivalent) in each jurisdiction. JRGWI provides a forum for states and territories to articulate their water information priorities and activities, improve the flow of water information between their agencies and the Bureau, discuss ways to contribute to the national water information strategy and provide feedback to the Bureau on its various water information products, both during the development and operational phases.

Representative agencies on JRGWI are responsible for liaising with other water data collectors in their jurisdiction regarding the Regulations and also the $80 million Australian Government fund which the Bureau is administering to extend and modernise data collection nationally. Through JRGWI the Bureau is in discussion with many of the private data collectors included in the Regulations. Many of the major data collectors named in the Regulations have put forward or are proposing to put forward funding applications to the Bureau.

See http://www.austlii.edu.au/au/legis/cth/num_reg_es/wr2008n106o2008275.html.

on 23 and 24 July 2009. The text of the Item Paper follows:[265]

Background

Proposed licensing of water data and information products using Creative Commons (CC) was discussed at JRGWI-2 and JRGWI-4 and with the jurisdictions via a letter from the Director of Meteorology in August 2008. In June 2009, the Bureau's Executive approved the Water Division's recommendation to adopt the CC licensing approach for water data obtained through the Water Regulations 2008. This paper outlines the Bureau's plan to implement support for CC licensing within AWRIS.

Progress

Under Section 123 of the *Water Act* 2007, the Director of Meteorology may publish any water information that the Bureau holds without the need to obtain agreement from any provider to do so, unless he/she believes that it would not be in the public interest to do so.

However, while the *Water Act* 2007 implicitly supports access and normal use of water information by third parties (as part of the completion of the dissemination by the Bureau), it does not extend to granting any explicit usage rights to third party users. The Australian Government Solicitor (AGS) advises that the Water Act 2007 supports activities reasonably incidental to a user gaining access to the published information. This includes downloading, printing and internal or personal use, but probably not more 'downstream' use, such as the making of derivative material or creation of a product that is further distributed or communicated for commercial or non-commercial purposes.

Section 129 of the *Water Act* 2007 is explicit on the retention of ownership of water data by the data givers, stating that the "giving of information does not affect a person's property rights with respect to that information". The Bureau therefore will not own the bulk of the information it acquires under the Water Regulations 2008.

The utility of Australia's water information will be maximised by making it freely available for use by all persons, including uses for commercial purposes. However, as discussed above, the Bureau is restricted in its right to apply any licence to that information or to confer any rights on third parties to use that information. We have therefore elected to promote and actively support the application by data owners of the Creative Commons Attribution licence to the water information they supply. The Creative Commons Attribution licence, known as the "By Licence", merely requires users to attribute the data owner when they use the data for any purpose not covered by the Water Act 2007 provisions.

In 2008-09, using Modernisation and Extension funding, the Bureau funded the Queensland Department of Environment and Resource Management (DERM) Government Information Licensing Framework (GILF) for Water project, which has supported the Bureau's proposed licensing approach and undertaken a series of seminars in jurisdictions on Creative Commons.

Next steps

The Bureau has been working actively with the lead water agencies to promote the uptake of CC licensing and will provide on-line and other support to enable data givers to understand and apply a CC license easily.

It is expected that some jurisdictions will adopt CC licensing for government information across all agencies as their default position. This appears likely in the case of Queensland, through the proposed Right to Information Bill 2009, and South Australia, for water data through the SA:GILF-Water project. The position of other states and territories is still in development but it is likely that other whole-of-jurisdiction approaches to licensing of water data, and government information more broadly, may be forthcoming.

Use of CC licensing should be attractive to organisations as it provides a simple and effective way to open up access to data, whilst retaining some rights, and promises to reduce the administrative burden for data providers in maintenance and communication of licensing conditions.

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[265] BoM intends to make this paper available through its website later this year. See http://www.bom.gov.au.

Over the next six months, the Bureau will continue to actively promote the use of CC licensing to organisations providing data under the Water Regulations 2008. In late 2009, the Bureau will explicitly ask each data supplying organisation to agree or not agree to use of a CC license for their water data. Users of AWRIS will be able identify information that is provided with a CC licence or, where information is not so licensed, to ascertain the contact details of the data provider so that they may seek any licence conditions that apply.

The Bureau acknowledges the work done by the Queensland Government and others, including the Australian Bureau of Statistics (ABS) and Geoscience Australia (GA), in pioneering the adoption of CC licensing. This approach aligns with growing recognition both nationally and internationally that governments, wherever possible, should not only make their information publicly available but also make it available on open access terms that permit and enable its use and reuse.

While CC licensing includes a standard suite of six licences, the Bureau is strongly encouraging organisations providing data to adopt the most open licence, CC Attribution. This is the licence used by ABS on most of its data and information products, and GA on some of its data sets available for download.

Issues

The Bureau requests that:

(i) JRGWI members and SWICs commence raising awareness in their jurisdiction that the Bureau will be writing to data supplying organisations seeking their agreement to attach a CC Attribution license to the data they supply to the Bureau under the Water Regulations 2008.

(ii) JRGWI members and SWICs advocate the benefits of the CC Attribution licensing approach for water information.

"$50 million for new water research alliance", Senator Penny Wong, Minister for Climate Change and Water and Senator Kim Carr, Minister for Innovation, Industry, Science and Research (2008)

On 4 September 2008, Senator Penny Wong, Minister for Climate Change and Water, launched the Water Information Research and Development Alliance (WIRADA), a joint initiative between BoM and CSIRO. WIRADA is the largest water information research project in the southern hemisphere:

The Water Information Research and Development Alliance (WIRADA) is a five-year, $50 million research partnership between Bureau of Meteorology (the Bureau) and CSIRO. It aims to provide a state-of-the-art, national database on Australia's water resources.

Under the Rudd Government's *Water for the Future* program, the Bureau has the role of reporting on the availability, condition and use of water resources across Australia.

Through the new WIRADA initiative, CSIRO will perform research specifically for the Bureau that will be integrated into the way its water monitoring, analysis and prediction systems are developed.

"*Water for the Future* has four key priorities: tackling climate change, using water wisely, supporting healthy rivers, and securing water supplies," Senator Wong said.

"WIRADA will help us develop more robust monitoring and prediction tools to help the Bureau deliver on its new water information responsibilities."

Senator Carr said the WIRADA initiative would have benefits for both CSIRO and the Bureau, along with the nation as a whole.

"Access to reliable water reporting and assessment at the national level will be a first for Australia, as water

resource information is currently spread across hundreds of water agencies and organisations in all states and territories," Senator Carr said.

WIRADA will assist the Bureau to deliver on new water information responsibilities, including:

- Storing and managing all of Australia's water data;
- Reporting on the status of Australia's water resources, patterns of water use and forecast future water availability;
- Maintaining a comprehensive set of water accounts for the nation;
- Setting national standards for water use metering and hydrologic measurements;
- Influencing and supporting state-based investments in water monitoring and water use metering programmes; and
- Procuring special data sets to enhance our understanding of Australia's water resources.[266]

Public Sector Mapping Agencies Australia (PSMA Australia)

PSMA Australia Limited is an unlisted public company limited by shares established under the *Corporations Act 2001* (Cth), in which the Commonwealth, State and Territory governments are stakeholders.[267] It was established as a service provider to the Australian Bureau of Statistics, to coordinate the collection of fundamental national geospatial datasets and to facilitate access to this data.

PSMA Australia's origins date back to 1993 when the heads of all the Australian public sector mapping agencies (Surveyors-General in the federal, State and Territory governments) decided to form an intergovernmental consortium in response to a public tender issued by the Australian Bureau of Statistics for a complete integrated national digital base map to support the 1996 national census.[268] Mathew Warnest observes that NSW was "the driving force in meeting the Australian Bureau of Statistics' need for a nationally consistent cadastral map of Australia".[269] Subsequently, PSMA developed a nationally consistent, multi-resolution dataset comprising cadastral and topographic mapping information that formed the basis of the 1996 and 2001 national censuses.[270] The PSMA base map was also made available for commercial use and is now included in a range of products produced by the private sector.

Following an independent review of PSMA's organisational and management structure in 1997, in June 2001, PSMA completed the transition from an unincorporated joint venture to its incorporation as a company owned by the Commonwealth, State and Territory governments. The PSMA Board, made up of senior public servants from each of the State and Territory governments and the Australian government, meets four times a year. Between meetings the Executive Committee (consisting of the Chairman, Deputy Chairman and Marketing Director) provides linkage for the CEO to the board. The PSMA Board operates on a three-year strategic plan as well as an annual

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[266] *Media release: $50 million for new water research alliance*, Senator Penny Wong, Minister for Climate Change and Water and Senator the Hon Kim Carr, Minister for Innovation, Industry, Science and Research, PW 163/08 4 September 2008 at http://www.environment.gov.au/minister/wong/2008/mr20080904.html accessed 8 September 2008. See also Maurits van der Vlugt, Jorg Hiltenkamp and David Perry, *A Water Resources Information Infrastructure*, Position Magazine, Issue 35, June-July 2008.
[267] See http://www.psma.com.au/aboutpsma/ourhistory.cfm.
[268] M Warnest, *A Collaboration Model for National Spatial Data Infrastructure in Federated Countries,* PhD Thesis, Department of Geomatics, Melbourne University, 2005, p 105.
[269] Ibid, p 110.
[270] Ibid, p 106.

program covering all the activities to be undertaken within a financial year.

PSMA explains its principal objective as being "to facilitate broad, yet sustainable, access to our data".[271] It offers a range of spatial data products and services that are primarily derived from the extensive geospatial data resources held by the public sector, which are drawn on to develop comprehensive, seamless national spatial datasets for use by government, industry and the community. Considering that PSMA's shareholders are the nine mapping agencies of the State, Territory and Australian Governments, it enjoys "an unprecedented level of cooperation with the Australian governments who are currently the prime collectors of such information".[272]

According to PSMA, it does not aim to compete with the private sector but rather seeks to support and encourage innovation. It facilitates access to geospatial information through its range of "seamless national datasets" derived from government data sources, removing barriers and simplifying licensing of national datasets to value-added resellers and thereby enabling and stimulating the spatial industry. In effect, it is a wholesaler selling integrated data to value-adding enterprises.

PSMA describes its activities as follows:

> We have established a national framework to focus the combined mapping resources of Australian, state and territory government agencies. The policies, standards and operational techniques of these agencies are different, as are their levels of sophistication and advancement, so part of our role is to help their disparate data resources mesh, cooperate and function uniformly to create high-quality products.[273]

PSMA currently produces six national datasets based on data from all the jurisdictions, with several others in various stages of assembly:

> At PSMA Australia Limited we combine spatial data from Australia's governments with leading-edge technology to create national spatial information datasets that include features such as roads, street addresses, and cadastral and administrative boundaries.
>
> These datasets are then used by a network of partners who develop products and services that present the data in meaningful and useful ways. These products and services cater for a wide range of industry, government and community uses that deliver economic, environmental and social benefits to the whole of Australia.
>
> The data we make available is an enabler, delivering greater value from existing resources. When combined with appropriate software, our digital mapping data can enhance core business outcomes, reduce crime and improve emergency responses, or simply help you navigate to a restaurant in an unfamiliar city.
>
> Our data can be used separately or together to create an infrastructure of spatial data crucial to many business operations. We currently produce six datasets:
>
> - *Administrative Boundaries*
>   Boundaries in themes from electoral to suburbs
> - *CadLite*
>   Australia's 10.4 million land parcels, including suburb names
> - *G-NAF*
>   An index of all Australian addresses

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[271] See http://www.psma.com.au/aboutpsma/.
[272] PSMA submission to the Digital Economy Future Directions Consultation Paper, 2009 at http://www.dbcde.gov.au/__data/assets/word_doc/0017/112553/Public_Sector_Mapping_Agencies_PSMA.doc accessed on 11 June 2009.
[273] See http://www.psma.com.au/aboutpsma/ourhistory.cfm.

- *Points of Interest*
  Everything from accommodation to banks, hospitals to museums
- *Post Code Boundaries*
  Official Australia Post post code polygon and point data
- *Transport and Topography*
  Road, rail, rail stations and air infrastructure, parks and water bodies.[274]

CadLite, the nationally consistent cadastral map base of Australia, consisting of over 10 million polygons representing every land parcel in Australia was released by PSMA in 2001. In conjunction with the ABS, Australia Post, the Electoral Commissions of Australia and Telstra, PSMA developed the Geocoded National Address File (G-NAF) which was released in late 2003.[275] G-NAF contains more than 12 million addresses and is updated on a regular (quarterly) basis. PSMA has entered into licensing agreements with these contributors to cover the use of the address data supplied for the G-NAF. Users include the ABS, the Defence Department, Australia Post, the Australian Electoral Commission, the telecommunications industry, emergency services and the banking sector.

PSMA's material is primarily based on data "contributions" that it obtains from government sources throughout Australia. The agencies and oganisations that collect and control the data used by PSMA are known as "data custodians". PSMA has entered into licences with the relevant mapping agencies in the federal, state and territory governments. For example, the National Mapping Division of Geoscience Australia[276] is the custodian of Australian Government data licensed to PSMA.[277] The National Mapping Division in Geoscience Australia is the custodian of Australian government data licensed to PSMA. Separate licensing agreements have been entered into with Australia Post and the Australian Electoral Commission to cover PSMA's use of the address data supplied for the G-NAF.

PSMA Distribution distributes PSMA data, under licence arrangements, to private sector value-added resellers. It distributes to:

- *full access resellers* – these resellers are licensed to develop and license full and embedded access products and services containing PSMA data, as well as to distribute raw PSMA data;[278] and

- *embedded access resellers* – these resellers are licensed to develop and license embedded access products and services containing PSMA data.[279]

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[274] See http://www.psma.com.au/products/.

[275] G-NAF is based on the Standard AS/NZS 4819-2003 – rural and urban addressing. See generally, Mathew Warnest, *A Collaboration Model for National Spatial Data Infrastructure in Federated Countries,* PhD Thesis, Department of Geomatics, Melbourne University, 2005, pp106-107.

[276] The National Mapping Division of Geoscience Australia provides fundamental geographic information to support the mining, agricultural, transport, tourism and communications industries, as well as defence, education, surveillance and emergency services activities: see http://www.psma.com.au/aboutpsma/datacontributors.cfm#people-govt.

[277] See http://www.psma.com.au/aboutpsma/datacontributors.cfm.

[278] The full access resellers are listed at http://www.psma.com.au/wheretobuy/fullaccessresellers.cfm. As of February 2009, PSMA's full access resellers were: Callpoint; Experian QAS; Geomatic Technologies; Intech Solutions Pty Ltd; MapData Sciences; MapInfo Australia; Navigate; NAVTEQ; OMNILINK; Pacific Micromarketing; Pathfinder Solutions; and TerraPages.

[279] The embedded access resellers are listed at http://www.psma.com.au/wheretobuy/embeddedaccessresellers.cfm. As of February 2009, PSMA's embedded access resellers were: Amristar; Boyce Industries; Datalink Technologies Pty Ltd; EAC; Explore Australia Publishing; Magenta Technologies; Manly Multimedia; Multimap.com; Next Destination;

PSMA has developed a cross-jurisdictional spatial data management system (LYNX) to enhance the quality and management of national spatial information datasets, providing integrated layers of spatial data which are used to create electronic mapping information and products.[280] PSMA is currently developing LYNX2 which provides a secure, distributed, online environment to improve the distribution of spatial data between suppliers, data managers and clients.

In its submission to the Department of Broadband, Communications and Digital Economy's *Digital Futures* Consultation Paper in 2009, PSMA acknowledged that "the widest possible use of spatial information would have significant benefits for businesses and individuals Australia wide". However, while providing PSI (including spatial data) to businesses and individuals free or at a minimal cost, with easy access and licensing, would be attractive, PSMA did not consider that these factors alone would be sufficient to encourage active participation and use:

> Data collected by government agencies and made available to users in its raw form will be of little value to business and individuals. Simply providing freely accessible raw data will do little to attract businesses and individuals to use the data. The benefits and demand will come when the data it collated, analysed, organised and effectively presented in an easy to access format that provides users with information of value that matches their specific needs. These specifically-designed, value added services will cost and will need to be paid for by those they are specifically designed for.

> Provided the raw data is freely available individuals and businesses will step in to turn raw data into valuable information, but will only do so if they can get a return on their investment or at minimum cover their costs. Businesses could not afford to provide the value added services without remuneration either from government or from the end users.

> The cost for consumers to access processed information would be minimal compared to the value inherent in the data, and the Australia economy would benefit from the improved use of information, greater knowledge and less duplication of effort. …… Geospatial information in a usable format is most useful to a large number of industries, individuals and educational institutions. In raw from geospatial data will provide very little value to industries outside the geospatial industry. Data effectively presented and analysed would be of use to the majority of the Australian population and will help to promote social inclusion across Australia.[281]

ANZLIC – the Spatial Information Council (ANZLIC)

ANZLIC – the Spatial Information Council is the peak intergovernmental council responsible for the coordination of spatial information management in Australia and New Zealand.[282] It had its origins as the Australia Land Information Council (ALIC) which was formed in January 1986, by agreement between the Australian Prime Minister and the heads of the State governments, to co-ordinate the collection and transfer of land-related information between the different levels of government and to promote the use of the information in decision-making.[283] It was established to

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Tracks Gear; Transtech; Virtual Map (Australia).

[280] See https://lynx.geometryit.com/application/smarty/application/sdw_online/login.php (Note - requires login).

[281] PSMA, submission to Digital Futures Consultation Paper, 2009, pp 1-2, available at http://www.dbcde.gov.au/__data/assets/word_doc/0017/112553/Public_Sector_Mapping_Agencies_PSMA.doc.

[282] See http://www.anzlic.org.au/.

[283] ANZLIC, "History": http://www.anzlic.org.au/about_history.html at 9 July 2008; see also Rob Davies and Mary Rowlatt, *Report on ePSINet study visit to Australia*, 9-15 May 2004, ePSINet, pp 7-8, http://www.epsiplus.net/content/download/391/2473/file/epsinet_australia_report.doc at 9 July 2008; Ian Masser, *An International Overview of Geospatial Information Infrastructures: Lessons to be Learnt for the NGDF,* 1998, http://www.ngdf.org.uk/Pubdocs/General/mass7.98.htm at 9 July 2008; and Renate Mason, *Developing Australian*

"provide a forum for debate on land information policies at the national level, and explore the scope for adoption of compatible policies and standards [between the States and Territories]".[284] New Zealand was represented on ALIC from 1987 and upon joining as a full member in November 1991 the Council's name was changed to the Australia and New Zealand Land Information council (ANZLIC).[285]

Membership of ANZLIC consists of representatives from each of the Australian States and Territories, the Commonwealth and New Zealand. ANZLIC also provides "the overarching framework for other relevant coordinating bodies, such as ICSM (Intergovernmental Committee on Surveying and Mapping) and PSMA (Public Sector Mapping Agencies Australia Ltd)".[286]

An account of ANZLIC's origins is provided by Rob Davies and Mary Rowlatt:

> ANZLIC was established in 1986 as an opt-in government body to act as a means of communication between Australian states, the Australian and New Zealand governments on spatial information issues at a time when they were digitising land registers and resource information, in order to share business cases on how to achieve this and develop common policies to work towards consistency, custodianship and liability.[287]

Although ANZLIC was originally an acronym, in April 1999, after considering that the term "land information" failed to convey the Council's breadth of interests, it adopted ANZLIC as its title with the explanatory sub-title "the Spatial Information Council".[288] In 2001, ANZLIC established a national office in Canberra to accelerate the Council's work program.[289]

ANZLIC's responsibilities are not restricted to cadastral and mapping matters but cover all types of land information including socio-economic data, natural resource information, environmental data and utilities and infrastructure information.[290] As well as providing focus and leadership for the spatial information community, since 1996 ANZLIC has led the development of the Australian Spatial Data Infrastructure (ASDI),[291] including coordination of the SDIs (spatial data

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Spatial Data Policies – existing practices and future strategies, PhD thesis, School of Geomatic Engineering, UNSW, 2000, pp 8, 30-31 and 37, http://www.library.unsw.edu.au/~thesis/adt-NUN/uploads/approved/adt-NUN20021106.165932/public/01front.pdf and http://arrow.unsw.edu.au/vital/access/manager/Repository/unsworks:512?start=346.

[284] The report of the Commonwealth Interdepartmental Committee on Spatial Data Access and Pricing (June 2001) *A Proposal for a Commonwealth Policy on Spatial Data Access and Pricing*, Attachment D: Coordination Arrangements for the Implementation of the Commonwealth Policy on Spatial Data Access and Pricing, p 46, available at http://www.osdm.gov.au/osdm/policy/accessPricing/SDAP.pdf.

[285] ANZLIC, "History": http://www.anzlic.org.au/about_history.html at 9 July 2008; see also Ian Masser, *An International Overview of Geospatial Information Infrastructures: Lessons to be Learnt for the NGDF*, 1998, http://www.ngdf.org.uk/Pubdocs/General/mass7.98.htm at 9 July 2008; and Renate Mason, *Developing Australian Spatial Data Policies – existing practices and future strategies,* PhD thesis, School of Geomatic Engineering, UNSW, 2000, pp 30-31 and 37, http://www.library.unsw.edu.au/~thesis/adt-NUN/uploads/approved/adt-NUN20021106.165932/public/01front.pdf and http://arrow.unsw.edu.au/vital/access/manager/Repository/unsworks:512?start=346.

[286] M Warnest, *A Collaboration Model for National Spatial Data Infrastructure in Federated Countries,* PhD Thesis, Department of Geomatics, University of Melbourne, 2005, p 101.

[287] R Davies and M Rowlatt, *Report on ePSINet Study Visit to Australia: 9 – 15 May 2004,* p 7 at http://www.epsiplus.net/content/download/391/2473/file/epsinet_australia_report.doc.

[288] ANZLIC, "History": http://www.anzlic.org.au/about_history.html accessed on 9 July 2008.

[289] Ibid.

[290] Ian Masser, *An International Overview of Geospatial Information Infrastructures: Lessons to be Learnt for the NGDF,* 1998, available at http://www.ngdf.org.uk/Pubdocs/General/mass7.98.htm accessed on 9 July 2008.

[291] See ANZLIC's website at http://www.anzlic.org.au/infrastructure_ASDI.html accessed on 31 August 2008.

infrastructures or geographic information systems) of the various member jurisdictions.[292] The ASDI has been described as "akin to other national infrastructures such as communications, transport and utilities".[293] Complete SDIs incorporate "core digital map bases such as the cadastre or land parcel layer, topography, hydrology, road networks and administrative boundaries [and] have usually been based on the amalgamation of national or state mapping and cadastral or land registration systems".[294] Work towards a SDI was stimulated by ANZLIC's release of a discussion paper in November 1996 which provided a definition of the ASDI.[295] In 1999, Drew Clarke (then) Chairman of ANZLIC's Standing Committee on Spatial Data Infrastructure described ANZLIC's vision of the ASDI as:

> a distributed network of databases, linked by common policies, standards and protocols to ensure compatibility. Each database will be managed by a custodian with the expertise and incentive to maintain the database to the standards required by the community and committed to the principles of custodianship.[296]

SDI development in Australia is being led by ANZLIC, the Intergovernmental Committee on Surveying and Mapping (ICSM) and the Public Sector Mapping Agencies Australia Ltd (PSMA).[297] ICSM, which "undertakes the development of national geodetic, topographic and cadastral standards",[298] reports to the ANZLIC Council. ANZLIC has two dedicated committees working towards the ASDI: the ASDI Standing Committee and the Land Administration Standing Committee. The ASDI Standing Committee coordinates ASDI technical implementation projects and the activities of the ICSM and ANZLIC sub-committees and working groups; it also identifies and promotes the development of the standards and protocols required for the implementation of the ASDI.[299] PSMA and ICSM are represented on the ASDI Standing Committee.

In 1998, ANZLIC released the Australian Spatial Data Directory (ASDD) consisting of tens of thousands of metadata records on numerous distributed nodes.[300] Neil Williams of Geoscience

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[292] Renate Mason, *Developing Australian Spatial Data Policies – existing practices and future strategies,* PhD thesis, School of Geomatic Engineering, UNSW, 2000, p 37, http://www.library.unsw.edu.au/~thesis/adt-NUN/uploads/approved/adt-NUN20021106.165932/public/01front.pdf.

[293] N Williams, *The Australian Spatial Data Infrastructure,* paper presented to Australian Disaster Conference, 2003 at http://www.ema.gov.au/agd/EMA/rwpattach.nsf/viewasattachmentpersonal/(63F21BC6A4528BAE4CED2F9930C45677)~DC+williams+Ausn+Disaster+Cconference+2003++paper.pdf/$file/DC+williams+Ausn+Disaster+Cconference+2003++paper.pdf accessed on 31 August 2008.

[294] S Jacoby, J Smith, L Ting and I Williamson, *Developing a Common Spatial Data Infrastructure between state and Local Government – An Australian case study,* International Journal of Geographical Information Science, vol. 16, no. 4, p 305. Jacoby et al comment (at p 306) that the integration of these two usually disparate data sets (that is, the traditional national or state mapping systems and the spatial cadastre or land parcel layer, which are based on different projections and administered in different government departments) continues to be a challenge in most countries in Western Europe, many jurisdictions in North America and many other countries worldwide.

[295] Mathew Warnest, *A Collaboration Model for National Spatial Data Infrastructure in Federated Countries,* PhD Thesis, Department of Geomatics, Melbourne University, 2005, p 93, referring to ANZLIC, *Spatial Data Infrastructure for Australia and New Zealand,* 1996.

[296] Drew Clarke, "Spatial Data Infrastructures – From Inspiration to Implementation" *Proceedings of AURISA 99 – The 27th Annual Conference of AURISA,* Blue Mountains, New South Wales, 22-26 November 1999, quoted in Renate Mason, *Developing Australian Spatial Data Policies – existing practices and future strategies,* PhD thesis, School of Geomatic Engineering, UNSW, 2000, p 37, http://www.library.unsw.edu.au/~thesis/adt-NUN/uploads/approved/adt-NUN20021106.165932/public/01front.pdf and http://arrow.unsw.edu.au/vital/access/manager/Repository/unsworks:512?start=346.

[297] M Warnest, *A Collaboration Model for National Spatial Data Infrastructure in Federated Countries,* PhD thesis, Department of Geomatics, University of Melbourne, 2005, p 101.

[298] Ibid, p 102.

[299] Ibid, pp 101-102.

[300] The ASDD, which is hosted by Geoscience Australia, currently lists more than 40,000 spatial dataset descriptions,

Australia describes the ASDD as follows:

> The Australian Spatial Data Directory (ASDD) is one of the most important components of the ASDI so far developed. Initiated in 1998, the ASDD currently comprises 25 'nodes', maintained by agencies in the Australian Government, States and Territories, CSIRO and others. Collectively, more than 33,000 dataset metadata records can be searched via the national gateway, maintained by Geoscience Australia.
>
> The current ASDD provides a powerful but simple method of searching and discovering spatial data. From there, one can identify which would be the most relevant, negotiate with the custodian to access the data or, increasingly, download it directly, on-line. Whether your requirement is datasets relating to emergency (2456 records), roads (2193) or animal health (16), the ASDD is a vital national infrastructure resource.[301]

ANZLIC also played a central role in the 2001 *Positioning for Growth* action agenda. Rob Davies and Mary Rowlatt made the following observations in their 2004 *Report on ePSINet study visit to Australia*:[302]

> In March 2000, the ANZLIC Industry Development Standing Committee announced an initiative to drive development of a national spatial information industry. A key element of the initiative was to encourage the establishment of a national spatial industry group to stimulate a viable, robust private sector spatial information industry for Australian, resulting in *An Australian Spatial Information Industry: Development of a viable, robust, national private sector spatial information industry for Australia* (discussion paper - July 2000)…
>
> This Industry Action agenda did not provide a path to funding but provided recommendations to Government for policy changes through its report: *Positioning for Growth (2001)* www.anzlic.org.au/get/2358011765. Spatial information was seen as underlying business needs across a number of policy sectors and some of these were identified for action. Access and pricing were its focus. Other aspects of emphasis were the availability of spatial data for services that take data into products for consumer markets, partnership between public and private sectors, value propositions etc.[303]

"Spatial Information – Privacy Issues: Discussion paper", "ANZLIC Spatial Information Privacy Best Practice Guideline" and "Discussion Paper: Access to Sensitive Spatial Data", ANZLIC Spatial Data Infrastructure Standing Committee (2004)

In February 2004, ANZLIC released the *Spatial Information – Privacy Issues* discussion paper and the *ANZLIC Spatial Information Privacy Best Practice Guideline.*

The discussion paper was developed following a national workshop held on 25 November 2002, in which ANZLIC, OSDM and other government bodies participated.[304] The discussion paper sets out

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distributed among 10 to 12 nodes around Australia. The metadata is organised according to ANZLIC's profile of ISO standard ISO 19115: see *Submission from the Australian Government Office of Spatial Data Management to the Victorian Parliament's Economic Development and Infrastructure Committee Inquiry into Improving Access to Victorian Public Sector Information and Data,* Ben Searle, General Manager, OSDM, 2008, p 8.

[301] N Williams, *The Australian Spatial Data Infrastructure,* paper presented at Australian Disaster Conference 2003, p 2, available at http://www.ema.gov.au/agd/EMA/rwpattach.nsf/viewasattachmentpersonal/(63F21BC6A4528BAE4CED2F9930C45677)~DC+williams+Ausn+Disaster+Cconference+2003++paper.pdf/$file/DC+williams+Ausn+Disaster+Cconference+2003++paper.pdf.

[302] Rob Davies (MDR) and Mary Rowlatt (Essex), *Report on ePSINet study visit to Australia*, 9-15 May 2004, ePSINet, available at www.epsiplus.net/content/download/391/2473/file/epsinet_australia_report.doc accessed on 15 July 2008.

[303] Ibid, pp 7-8.

[304] ANZLIC, *Spatial Information – Privacy Issues: Discussion paper* (Version 2.0 (Final)), 13 February 2004, p iii,

the reasons for and benefits of an ANZLIC Privacy Best Practice Guideline, the primary reason being to provide a clear and common approach to privacy protection in relation to personal spatial information, which is likely to meet the requirements of the differing privacy rules operating within and across the jurisdictions.[305] The intent was to reduce the uncertainty created by privacy standards that differ from one jurisdiction to the next, including standards that differ between States, between the Commonwealth and the various States, and between the public and private sectors.[306]

The introduction to the *ANZLIC Spatial Information Privacy Best Practice Guideline* states:

> ANZLIC recognises that advances in information technology are fuelling community concern about the impact on privacy; and is striving to ensure that benefits from easier access to, and better utilisation of, spatial information are realised without adding to this concern.[307]

It addresses spatial information, specifically spatial information that is linked to personal information. "Personal spatial information" is defined as:

> information combined with, linked to or contained within any spatial object or location. Examples include: a persons name linked with their address, or the linking of a mobile phone owner's name, mobile phone number, and the geographical 'cell' within which the phone is being used.[308]

The Best Practice Guideline explains the relationship between personal information and spatial information as follows:

> Spatial information, in some contexts, will also be personal information as defined under privacy legislation. For example, situations will arise where property address information collected in a spatial information context might also be personal information. If there is only one individual living at a property in an isolated area, then by merely referring to a street address it could be possible to identify an individual.
>
> The majority of the spatial information created, held and maintained by government agencies is not personal information. For example, mapping, survey and geodetic data is unlikely to hold any information that identifies a particular individual.
>
> However this spatial information can be easily linked to personal information, including health and sensitive information. The personal spatial information is a combination of personal information and spatial information.[309]

It is designed for public sector agencies that are custodians of or collect, maintain or distribute information with a spatial content.[310]

The Best Practice Guideline sets out twelve (12) standards for the collection, retention, disclosure and use of personal information and personal spatial information by public sector agencies:

1.   Collect only what is necessary:

     Personal spatial information is not collected unless:

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available at http://www.anzlic.org.au/policies_privacy.html accessed on 14 July 2008.
[305] Ibid, p 3.
[306] Ibid.
[307] Ibid, p 1.
[308] Ibid, p 7.
[309] ANZLIC (2004) *ANZLIC Spatial Information Privacy Best Practice Guidelines* (Version 2.0 (Final)), 14 February 2004, p 1, available at http://www.anzlic.org.au/policies_privacy.html accessed on 14 July 2008.
[310] Ibid, p 2.

- The information is collected for a lawful purpose that is directly related to a function or activity of the collector; and
- The collection of the information is necessary for that purpose.

Wherever it is lawful and practicable, individuals have the option of not identifying themselves when entering transactions.

2. Collect fairly and lawfully:

   Personal spatial information is not collected by means that are unlawful or unfair or that intrude to an unreasonable extent upon the personal affairs of the individual concerned.

3. Collect directly from the person:

   Personal spatial information is collected directly from the individual or someone they have authorised to provide the information (such as a legal representative).

   Exceptions apply:
   - When the personal information is contained in a public register; or
   - When the personal information is published in a magazine, book, newspaper or other generally available publication, whether in paper or electronic form; or
   - When the collection from another source is required or authorised by law.

4. Inform the person about the collection:

   At or before the time (or, if that is not practicable, as soon as practicable after) personal spatial information is collected from the individual concerned, reasonable steps are taken to ensure that the individual is aware of:
   - The fact that the information is being collected; and
   - The name and address of the organisation collecting it; and
   - The name and address of the organisation holding it; and
   - The purpose for which the information is being collected; and
   - If the collection of the information is authorised or required by law – the fact that the collection is so authorised or required and the title of the particular law; and
   - The main consequences (if any) for the individual if all or part of the information is not provided; and
   - Any person to whom, or organisation to which, it is the collector's usual practice to disclose personal information of the kind collected and (if known to the collector) any person to whom, or organisation to which, it is the usual practice of the first-mentioned person or organisation to pass on that information; and
   - The individual's rights of access to and correction of the information.

   If personal information is collected about an individual from someone else, reasonable steps are taken to ensure that the individual is, or has been, made aware of these things.

5. Use and disclose for authorised purposes:

   Personal spatial information that was obtained for a particular purpose is not used or disclosed for any purpose or in a way that intrudes to an unreasonable extent upon the personal affairs of the individual concerned;

6. Manage transborder data flows:

   Personal spatial information is not transferred to anyone who is not subject to a law, binding agreement or contract which effectively upholds principles for fair handling of the information that are substantially similar to those with which Government agencies comply;

7. Ensure data quality:

When collecting personal spatial information, and also before using it, reasonable steps are taken to ensure that it is:
- Accurate; and
- Up to date; and
- Complete; and
- Not excessive; and
- Relevant to the purpose for which it is collected or used, and
- Not misleading.

8. Keep personal information secure:

Personal spatial information is protected, by such security safeguards as it is reasonable in the circumstances to take, against loss, against unauthorised access, use, modification or disclosure, and against other misuse.

If it is necessary for the organisation to give personal spatial information to a person in connection with the provision of a service to the organisation, everything reasonably within its power is done to prevent unauthorised use or disclosure of information in the record.

9. Retain only as long as required:

Personal spatial information is destroyed securely or permanently de-identified if it is no longer needed for an authorised purpose.

10. Be open about practices:

Any person can ascertain whether personal spatial information is held about them, the nature of the information, purposes for which it is used and how to gain access;

11. Provide a right of access and correction:

Individuals have the right to seek access to personal spatial information held about them and to have it corrected if necessary

12. Promote responsible use of spatial information:

A condition of all licences to use spatial information that either contains personal spatial information – or that the licensee can conceivably combine with personal information or any other information to produce personal spatial information – is that the licence holder is accountable under privacy legislation.[311]

In July 2004, the ANZLIC Council approved the discussion paper, *Access to Sensitive Spatial Data*, which states:

There are time when certain classes of spatial data need to be withheld from public access and usage. Tracks in forestry areas, location of critical infrastructure, defence establishments, detailed bathymetry of harbour approaches, culturally sensitive sites and location of endangered species have arisen as examples. Relevant factors include privacy and security…

While it is recognised that some data cannot be made public because of its sensitivity, the data should still form part of data sets managed by nominated authorities. Authorised users can be given access to it for appropriate purposes, while ensuring privacy, national security or other sensitivities are not compromised. It is ANZLIC's view that the issue is not about whether spatial data should be collected and made accessible, but what restrictions will be applied to its usage and how this should be decided.[312]

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[311] Ibid, pp 6-14.
[312] ANZLIC, *Discussion Paper: Access to Sensitive Spatial Data*, 16 July 2004, p 1, available at

"Local Government Spatial Information Management Toolkit: building capacity for integrated management solutions", ANZLIC and Australian Local Government Association (ALGA) (2004)

The *Local Government Spatial Information Management Toolkit*[313] was produced collaboratively by ANZLIC and the Australian Local Government Association (ALGA) to provide "background information on best practice for managing data as an asset and valued resource".[314] The Toolkit was aimed at those responsible for managing spatial data and information, although the principles described were considered to be "equally applicable to other type of data".[315] The main objectives of the Toolkit were to help build capacity of local government staff to use and manage spatial information effectively and to facilitate flows of spatial data and information within and between councils, with other levels of government and ultimately with the community.[316] It states:

> Policies and procedures are required to guide the transition from tactical, project-based data collection and management to a strategic information infrastructure that will inform decision-making on a wide range of issues.[317]

The Toolkit has two principal components:

- A Concise Guide for Technical Managers, which provides an introduction to the full Toolkit and includes three business cases from councils around Australia. Each local government case study presents an overview of business drivers for and benefits of the use of spatial information technologies from a local government perspective; and

- Ten (10) Technical Modules, which together form a spatial information management manual for use in local government, but where each module can also be read independently as a stand-alone document.[318]

Module 3 of the Toolkit, Data Management Principles, provides a framework for integrating the activities of data collectors, data managers and information providers.[319] The module draws on materials prepared by the UK Intra-governmental Group's Geographic Information Working Group on Principles and Practice of Geographic Information Data Management and the Launceston City

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http://www.anzlic.org.au/policies.html accessed on 14 July 2008.

[313] See http://www.alga.asn.au/policy/infotech/spatialinfotoolkit/index.php accessed on 14 July 2008.

[314] ANZLIC and Australian Local Government Association (ALGA) (2004), *Local Government Spatial Information Management Toolkit*, Module 3: Data management principles, 2004, p iii, available at http://www.alga.asn.au/policy/infotech/spatialinfotoolkit/index.php and http://www.anzlic.org.au/pubinfo/2403317122.html accessed on 14 July 2008.

[315] Ibid.

[316] See http://www.alga.asn.au/policy/infotech/spatialinfotoolkit/index.php accessed on 14 July 2008.

[317] ANZLIC and Australian Local Government Association (ALGA) (2004) *Local Government Spatial Information Management Toolkit*, Module 3: Data management principles, p iii, available at http://www.alga.asn.au/policy/infotech/spatialinfotoolkit/index.php and http://www.anzlic.org.au/pubinfo/2403317122.html accessed on 14 July 2008.

[318] See http://www.alga.asn.au/policy/infotech/spatialinfotoolkit/index.php accessed on 14 July 2008.

[319] ANZLIC and Australian Local Government Association (ALGA) (2004) *Local Government Spatial Information Management Toolkit*, Module 3: Data management principles, p iii, available at http://www.alga.asn.au/policy/infotech/spatialinfotoolkit/index.php and http://www.anzlic.org.au/pubinfo/2403317122.html accessed on 14 July 2008.

Council.[320]

The Module emphasises the importance of a "data policy" and provides guidance on how local governments can develop a data policy statement:

3.3 Principles of good data management

3.3.1 Data policy

The first step of any organisation or group wishing to implement good data management procedures is to define a data policy. This is a set of broad, high-level principles that form the guiding framework in which data management can operate. In most cases these have been identified at national and State/Territory level and can be readily transferred to local governments. See Section 3.4 for further information on establishing a data policy. Business processes are reviewed to ensure compliance with an organisation's documented data management processes, policies and procedures.

3.3.2 Data ownership

A key aspect of good data management involves the clear identification of the owner of the data. In most cases this is the organisation or group who originally commissioned the data and has managerial and financial control of the data. The data owner generally has legal rights over the data, along with copyright and intellectual property rights. This applies even where the data is collected, collated or disseminated by another party as part of contractual agreements.

Data ownership implies the right to exploit the data, and in situations where the continued maintenance becomes unnecessary or uneconomical, the right to destroy the data. Ownership can relate to a data item, a merged dataset or a value-added dataset. Intellectual property rights can be owned at different levels. For example, a merged dataset can be owned by one organisation, even though other organisations own the constituent data. If the legal ownership is unclear, the risk exists for the data to be wrongly used, used without payment of royalty to the owner, neglected or lost.

All data, information and knowledge must have an 'owner'. In this sense, whatever data local government produces: it must have an 'owner'.

As such it is important for data owners to establish and document the following:

- The ownership, intellectual property rights and copyright of their data in order that they are safeguarded.
- The statutory and non-statutory obligations relevant to their business to ensure that the data are compliant.
- The policies for data security, disclosure control, release, pricing and dissemination.
- The agreement reached with users and customers on the conditions of use in a signed Memorandum of Understanding or Licence Agreement, before data are released.

It is important to ensure that data ownership information is included with the metadata and related data documentation…

….

3.3.7 Data access and dissemination

The ease that data are made accessible and disseminated will depend on the business and financial policy of your local government. The following information is provided as a guide:

- Public access to data should be provided where possible.
- Access to data should be granted to customers and commercial organisations when the request is in line with the local government's business strategy, and does not infringe on any copyright, intellectual

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[320] Ibid, p iv.

property rights, or any statutory/non-statutory obligations.

- The right to use or provide access to data can be passed to a third party subject to agreed pricing and dissemination policies.

3.4 Establishing a data policy

The following information provides a guide to assist local governments in establishing a data policy statement…
....

3.4.4 Data use and exchange

- Memoranda of Understanding or Licence Agreements should be established with users and customers who receive data with respect to the subsequent use of the data. These should include confidentiality declarations and conditions of use.
- Intellectual property rights should be protected in relation to any development of information by specifying formally any restrictions on the use of the data in formal licensing arrangements.
- Adequate provision needs to be made for the widest possible public access to data and associated metadata.
- Pricing agreements should consider the cost of recovery of data and information in line with any policies or overarching obligations that may apply.[321]

"The Value of Spatial Information: The impact of modern spatial information technologies on the Australian economy", ACIL Tasman for ANZLIC and the CRC for Spatial Information (2008)

In March 2008, ANZLIC and the CRC for Spatial Information released a comprehensive study they commissioned from ACIL Tasman into the value of spatial information to the Australian economy.[322] It claimed to be the first comprehensive study of its kind in the world for a single nation.[323] The study found that in 2006 – 2007, Australia's spatial information industry contributed between $6.4 billion and $12.6 billion to GDP, had a positive impact on the balance of trade with exports increasing by up to $2.3 billion, and increased real wages by between 0.6% and 1.2%.[324] The study concluded that overall and with the right policies the contribution of the spatial information sector to the economic aggregates over the medium term could be 50% higher than in 2006-07.[325]

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[321] Ibid, pp 6-7, 9-11.

[322] The study is available at http://www.crcsi.com.au/uploads/publications/PUBLICATION_324.pdf. The Executive Summary is available at http://www.crcsi.com.au/uploads/publications/PUBLICATION_323.pdf. A corresponding study for New Zealand was published in 2009: ACIL Tasman, *Spatial Information in the New Zealand Economy: Realising Productivity Gains*, Report for Land Information New Zealand, Department of Conservation and Ministry of Economic Development, August 2009.

[323] Dr Peter Woodgate on behalf of the CRC for Spatial Information (CRC-SI) (2008) *Submission to the National Innovation System Review,* CRC-SI submission (no. 303) to the Innovation Review, 30 April 2008, p 18 http://www.innovation.gov.au/innovationreview/Documents/303-CRCSI.pdf accessed on 5 September 2008.

[324] ACIL Tasman for ANZLIC and CRC-SI (2008) *The Value of Spatial Information: The impact of modern spatial information technologies on the Australian economy,* March 2008, pp x – xxiii, 134-136 and 157, http://www.crcsi.com.au/uploads/publications/PUBLICATION_324.pdf. See also Dr Peter Woodgate on behalf of the CRC for Spatial Information (CRC-SI) (2008) *Submission to the National Innovation System Review,* CRC-SI submission (no. 303) to the Innovation Review, 30 April 2008, p 18 http://www.innovation.gov.au/innovationreview/Documents/303-CRCSI.pdf accessed on 5 September 2008.

[325] ACIL Tasman for ANZLIC and CRC-SI (2008) *The Value of Spatial Information: The impact of modern spatial information technologies on the Australian economy,* March 2008, p 159, http://www.crcsi.com.au/uploads/publications/PUBLICATION_324.pdf. See also Dr Peter Woodgate on behalf of the

A central focus of the ACIL Tasman report is the adoption of an appropriate licensing framework for spatial information. The Executive Summary states:

> **A national licensing framework**
>
> Custodians of spatial information must ensure that its distribution and use is in accordance with licences, agreements or other appropriate mechanisms that effectively manage the risks associated with the use of the information. The organisation acting as a data custodian is responsible for maintaining copyright provisions and ensuring that use of the information does not infringe any privacy or confidentiality requirements.
>
> However current licensing practices have not kept up with the pace of technology.
>
> An important development that is gaining widespread support in government is the development of a Government Information Licensing Framework (GILF). The GILF would be a standardised legal environment of terms and conditions within which all information transactions would occur.
>
> A possible avenue of facilitating information sharing across jurisdictions is the Creative Commons licensing regime. Creative commons licenses are designed to facilitate and encourage more versatility and flexibility in copyright. The Queensland government, in consultation with other governments, has been developing a draft access regime based on this principle. An important feature of the proposed approach is its capability to enable licences to be executed at the time of data transfer. This will increase the efficiency of user access while at the same time achieving the above aims.

"Statement of Purpose", Australian Spatial Consortium (2008)

The Australian Spatial Consortium (ASC), formed in 2007, comprises representatives of ANZLIC – the Spatial Information Council, the Australian Spatial Information Business Association (ASIBA), the Spatial Sciences Institute (SSI), PSMA Australia Ltd, the Cooperative Research Centre for Spatial Information (CRCSI) and 43 Pty Ltd. In the *Statement of Purpose* released on 15 May 2008,[326] the ASC outlines the complementary role that it will play, adding value to existing organisations to strengthen the impact of the spatial information industry:

> The development of the Australian Spatial Consortium represents one of the next logical steps following the success of the Spatial Information Action Agenda of 2001 in bringing a sense of cohesion to our industry. An empowered industry – government, corporate and research focus – will seek to collectively help address Australia's greatest information challenges including realising the potential of the nation's vast data holdings, promoting the establishment of world class positioning infrastructure and stimulating innovation.
> ……
>
> OPERATIONAL FOCUS
>
> The scope of interests is likely to include:
>
> 1. The formation of a structured 'think tank' and forum structure around which all interested parties can aggregate to share, develop and enhance their individual and collective thinking and action around spatial information.

CRC for Spatial Information (CRC-SI) (2008) *Submission to the National Innovation System Review,* CRC-SI submission (no. 303) to the Innovation Review, 30 April 2008, p 19 http://www.innovation.gov.au/innovationreview/Documents/303-CRCSI.pdf accessed on 5 September 2008.
[326] Australian Spatial Consortium, *Statement of Purpose,* 2008 at http://spatialinfocrc.org/UPLOADS/PUBLICATIONS/PUBLICATION_328.pdf accessed 31 August 2008.

2. Encouraging the construction of fundamental infrastructure eg global navigation satellite systems positioning framework, data stores and exchanges for value-adding and updating core datasets, digital rights management 'the creative commons', construction of critical data and information, driving the innovation and R&D agenda.

3. Helping form cross-sector partnerships and networks to tackle issues of international, national and regional interest including helping forge new levels of cooperation in information sharing.

KEY AREAS OF NEED

The Australian Spatial Consortium will work with and assist the core existing spatial information organisational bodies to address:

1. Shaping the national agenda and influencing the vision: identifying the national priorities for infrastructure and capacity building. This could include acting as a 'think tank' and beacon and recipient of ideas, and focus area for key minds to help think through the issues.
…
5. International spatial linkages: a special focus on developing international opportunities for business including joint ventures, developing IP access rights, recruiting and education.

OPERATING PRINCIPLES

The Australian Spatial Consortium will:

- Operate in a domain that aligns key goals of the public and private sectors.
- Operate in the national interest.
- Be apolitical.
- Foster innovation.
- Accumulate and share new knowledge.
- Pro-actively seek to add value to existing organisations.
- Forge new relationships and networks that would otherwise not be possible.
- Strongly enable e-Government.[327]

Other Australian Government Agencies

"Australian Government Information Interoperability Framework – Sharing information across boundaries", Australian Government Information Management Office (AGIMO) and Information Interoperability Working Group (2006)

In April 2006, the Australian Government Information Management Office (AGIMO) released the *Australian Government Information Interoperability Framework* ("the Information Interoperability Framework").[328] The Information Interoperability Framework was developed by a reference group

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[327] Ibid.
[328] Australian Government Information Management Office (AGIMO) and the Information Interoperability Working Group (April 2006) *Australian Government Information Interoperability Framework – Sharing information across boundaries*, available at http://www.finance.gov.au/publications/agimo/docs/Information_Interoperability_Framework.pdf. See generally, http://www.finance.gov.au/e-government/service-improvement-and-delivery/australian-government-information-interoperability-framework.html.

– the Information Interoperability Working Group - formed of representatives of a range of Australian Government agencies nominated by the Chief Information Officers' Committee (CIOC).[329] The Information Interoperability Framework identifies the components of a system in which information generated and held by government is "valued and managed as a national strategic asset". It sets out the principles underpinning sound information management and establishes concepts, practices and tools for achieving the successful sharing of information across agency boundaries.[330]

The term "information" is used in the Information Interoperability Framework to mean "any information developed, received or collected by, or on behalf of the Australian government through its agencies and contractors".[331] "Information interoperability" is explained as:

> the ability to transfer and use information in a uniform and efficient manner across multiple organisation and information technology systems.[332]

The vision of the Information Interoperability Framework is that "information held by government is valued and managed as a national strategic asset for the individual government, business and the community".[333]

The elements of the vision are:

- Collaboration across the public service, with individuals, other levels of government, business and the community supported through the sharing of information;
- Information flows easily amongst agencies and service providers to inform policy development, the continuous improvement of services and efficient and effective collaboration;
- Information from different sources can be easily integrated, is well documented and can be used appropriately;
- Privacy, confidentiality, intellectual property and associated security requirements are protected;
- There are clear responsibilities for the roles of providers, custodians and users of information; and
- Information is designed and managed in a way that promotes re-use and integration. It is easier to re-use existing information than create from scratch. [334]

The Information Interoperability Framework sets out several information management principles to provide the basis for information interoperability and support a culture of information reuse within government. These principles are as follows:

1. ***Manage information as an asset and a strategic resource***: The importance of regarding information as an asset and a strategic resource should be promoted. Expenditure on information management should be treated as an investment, not a liability. Information should be managed according to its value to the government and its agencies, with a focus on high value information assets;

2. ***Standardise information management practices***: Information management practices should be

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[329] See http://www.finance.gov.au/e-government/service-improvement-and-delivery/australian-government-information-interoperability-framework.html accessed on 21 July 2008. The Information Interoperability Working Group was a reference group made up of representatives from 17 Federal government agencies including the Attorney-General's Department, Australian Bureau of Statistics, Geoscience Australia and the National Archives of Australia.
[330] Ibid, p 3.
[331] Ibid, p 15. The word "information" is used in a sense that includes data. The term "data" is used only when it is necessary to make specific reference to data: see p 3.
[332] Ibid, p 3.
[333] Ibid, p 11.
[334] Ibid.

standardised across government to share and improve processes for accessing information. Information should be managed according to life cycle management protocols and be transferable across organisations, subject to the requirements of privacy, confidentiality, IP and associated security standards;

3. ***Generate information to support decision making***: Accurate, timely and relevant information should be available to share with others who have an appropriate business requirement. This principle is based on the need to continually work towards optimised agency and whole-of-government service delivery and organisational capability, supported by evidence-based decisions;

4. ***Collect quality information***: The collection of information should aim to be accurate, relevant, timely, reliable and cost-effective. The impost of information collection on the Australian public should be minimised as far as possible. Duplication and rework for staff should be minimised;

5. ***Re-use information from single authoritative source***: Information should be collected in a consistent manner and represent a single authoritative government perspective. The principle of re-use, where information is created once and is available to be used for different purposes with confidence, is fundamental;

6. ***Promote trust and confidence, rights and responsibilities***: The ethical use of information is paramount. Information management practices should be transparent, respect rights and enforce responsibilities. Access to and use of information should promote trust and confidence through adherence to privacy, confidentiality, and IP and security requirements; and

7. ***Achieve a net social benefit***: A net social benefit should be derived from whole-of-government and agency-specific information holdings. This should reflect a balance between compliance and service delivery and satisfy the important goals of service improvement and value creation.[335]

The Information Interoperability Framework identifies six critical enablers to the successful achievement of information interoperability, including:

- establishing appropriate governance arrangements;
- understanding the policy and legal framework governing the exchange of information; and
- developing and using tools that facilitate the transfer of reliable information across agency boundaries.[336]

The importance of understanding the legal and policy framework is explained as follows:

Agencies need to fully understand the legal, policy and administrative requirements and restrictions in their environment before they venture into significant information sharing activities. Without a good understanding of legal and policy requirements, agencies are likely to adopt a risk-averse approach and avoid information sharing. A good knowledge of obligations will ensure the implementation of information-access protocols consistent with legislation and policy needs.

Agencies should do the following:

- Identify legislation and policy which impacts on the provision and use of their information holdings and design appropriate information access protocols which promote external use of information in a way that complies with legal and policy obligations.
- Educate staff involved in information exchange on legal and policy obligations.
- Document and publish conditions on the access and use of information.
- Educate staff and information users on their legal obligations and restrictions on information use.
- Conduct audits and reviews of compliance on conditions relating to information access and use.[337]

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[335] Ibid, p 17.
[336] Ibid, p 25.
[337] Ibid, pp 32-33.

The importance of developing and using tools to facilitate transfer of information is explained as follows:

> To achieve Information Interoperability, agencies need to develop appropriate infrastructure and adopt relevant standards and protocols. Generic whole-of-government tools encourage consistency in information management practices and improve agencies' ability to re-use information.
>
> In some cases, agencies will be able to adopt generic tools created specifically for whole-of-government use, including information/data sets, standards, policy or procedural guidelines. However, where no tools or standards are available or where a cluster of agencies has a specific purpose not adequately met by generic tools, consideration should be given to adapting or developing specific-purpose tools to meet the need.[338]

The Information Interoperability Framework noted that the Australian Government Information Management Office (AGIMO) and relevant CIOC working groups were developing a number of the generic tools (standards, guidelines and check-lists) to support Information Interoperability to meet whole-of-government needs. The intention was that these generic tools would be distributed as they became available and would be widely promoted by AGIMO.[339]

"Statement of Intellectual Property Principles for Australian Government Agencies", Australian Government Attorney-General's Department (2007)

The *Statement of Intellectual Property Principles for Australian Government Agencies* (the 'IP Principles') establishes a broad policy framework for IP management by Australian government agencies.[340] The IP Principles cover several aspects of IP management, including procurement, innovation policy, commercialisation, public access and sharing of IP.

All Australian government agencies governed by the *Financial Management and Accountability Act 1997* (Cth) were required to comply with the requirements of the IP Principles by 1 July 2008, including developing an agency IP Policy. Agencies are encouraged to develop individual IP management frameworks that reflect their own needs and objectives, consistent with other relevant Australian Government policies and requirements.[341]

When the IP Principles were published, it was intended that supplementary guidance and advice for agencies would be provided in the form of an *IP Manual for Australian Government Agencies* produced by the Commonwealth Copyright Administration in the Attorney-General's Department.[342] While awaiting publication of the IP Manual (which is still a "work in progress"), government agencies have been assisted in developing their IP policies and IP management

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[338] Ibid, p 34.

[339] Ibid.

[340] Australian Government Attorney-General's Department (2007) *Statement of Intellectual Property Principles for Australian Government Agencies*, available at http://www.ag.gov.au/www/agd/agd.nsf/Page/Copyright_CommonwealthCopyrightAdministration_StatementofIPPrinciplesforAustralianGovernmentAgencies accessed on 29 August 2008.

[341] Ibid, p 1.

[342]See http://www.ag.gov.au/www/agd/agd.nsf/Page/Copyright_CommonwealthCopyrightAdministration_StatementofIPPrinciplesforAustralianGovernmentAgencies accessed 29 August 2008. The IP Manual is to be made available online at http://www.ag.gov.au/cca, but is not yet available as of 1 June 2009.

strategies by the Intellectual Property law team in the Australian Government Solicitor's office.[343]

Principles 11 and 12, under the heading "Sharing, Commercialisation, Disposal, and Public Access to IP", state:

> 11. *Agencies should encourage public use and easy access to copyright material that has been published for the purpose of:*
>
> - *informing and advising the public of government policy and activities;*
> - *providing information that will enable the public and organisations to understand their own obligations and responsibilities to Government;*
> - *enabling the public and organisations to understand their entitlements to government assistance;*
> - *facilitating access to government services; or*
> - *complying with public accountability requirements.*
>
> This includes all materials which agencies are generally obliged to publish or otherwise allow free public access to. It does not necessarily include materials that have been published for commercial purposes. Nor does it cover materials which are of a sensitive nature, such as information that impacts on national security or information which would destroy the possibility of subsequently obtaining patent protection where such protection is necessary to achieve public benefit.
>
> **Permission for public use and re-use of such material should generally be given on a non-exclusive basis. Exclusive licence to use such materials should only be given in exceptional circumstances.** [emphasis added]
>
> 12. *Australian Government agencies should be mindful of opportunities to share IP for which they are responsible with other agencies.*
>
> IP in the custody of an agency which does not have a legal identity separate from that of the Commonwealth, may be useful to other Australian Government agencies. Agencies should therefore maintain an awareness of opportunities to share IP.[344]

"NSIM Spatial Strategic Plan 2007-2010", National Spatial and Information Management (NSIM) working group, Attorney-General's Department (2007)

The purpose of the *NSIM Spatial Strategic Plan 2007 – 2010,*[345] produced by the National Spatial and Information Management (NSIM) working group in the Commonwealth Attorney-General's Department (published August 2007) was to set out agreement on directions for the development of a national spatial information capability to be used to support critical infrastructure protection,

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[343] See http://www.ags.gov.au/whatweoffer/areasoflaw/ip.htm. Note in particular, the document "Methodology for developing an agency IP policy" at http://www.ags.gov.au/whatweoffer/seminars/IPforumstudies/Methodology_for_an_Agency_IP_Policy_August07.doc and the "IP Review and Policy Development Questionnaire Suite" which is designed to assist FMA Act agencies in their internal processes of information gathering and analysis leading to the development of an IP Policy at http://www.ags.gov.au/whatweoffer/areasoflaw/IPsurvey/IP_Policy_Development_Questionnaire_-_Explanatory_Notes.doc accessed on 29 August 2008.

[344] Australian Government Attorney-General's Department (2007) *Statement of Intellectual Property Principles for Australian Government Agencies*, p 5, http://www.ag.gov.au/www/agd/agd.nsf/Page/Copyright_CommonwealthCopyrightAdministration_StatementofIPPrinciplesforAustralianGovernmentAgencies accessed on 1 June 2009.

[345] National Spatial and Information Management Working Group, Attorney-General's Department, August 2007, see http://www.nsim.gov.au/www/nsim/nsim.nsf/Page/Resources.

counter-terrorism and emergency management activities at the national, state and local government levels.

"Communique", Online and Communications Council (OCC) (2007/2008)

At the 14th meeting of the Online and Communications Council (OCC)[346] – consisting of the Commonwealth, State and Territory ministers and the representative of the Australian Local Government Association – held in Sydney on 29 June 2007, OCC members resolved to work towards the development of a National Information Sharing Strategy (NISS) and options for its implementation.[347] The Communique of the 14th OCC meeting stated:

> **Spatially Enabled Government**
>
> Geospatial data can powerfully enhance the way governments provide services to citizens. The importance of maps and the 'where factor' is integral to providing the right services to citizens in the right way. Council agreed to the development of a National Information Sharing Strategy and options for implementing the strategy.
>
> The Strategy will provide the processes and tools to enable jurisdictions to share information whilst preserving their legislative obligations and safeguarding the privacy of citizens.[348]

The OCC acknowledged the crucial role of access to, and re-use of, government information in data sharing arrangements which are essential if government services are to be delivered effectively and efficiently through the use of emerging technologies. NISS was seen as providing a standardised approach to information sharing to support the delivery of government services. The NISS proposal (agenda item 10(b), "Spatially Enabled Government – National Information Sharing Strategy") was presented by Ann Steward, Australian Government CIO and Chair of the Cross-Jurisdictional Chief Information Officers Committee (CJCIOC).   The origins of the NISS proposal were explained in item 10(b) as follows:

> This proposal was developed in part by a number of Australian Government, state government and university representatives in the spatial sector who saw that the issues that are occurring in the government spatial sector are the same as those in other government sectors such as scientific research and e-health.[349]

The NISS proposal was explained in the supporting documentation as follows:

- Technology has contributed to major changes in the ways in which the community interacts with government and the way in which governments provide services to citizens and business.

- As a result, governments around Australia are seeing the demand grow for the sharing of information, particularly the concept of 'information or data sharing' between governments across all portfolio areas.

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[346] The Online and Communications Council (OCC) is chaired by the Australian Government Minister for Broadband, Communications and the Digital Economy. The Council comprises a minister from each State and Territory, representing the area of online information and communications services. Local government is represented by the President of the Australian Local Government Association.

[347] Available at http://www.occ.gov.au/releases/fourteenth_online_and_communications_council_communique.

[348] Online and Communications Council (OCC) (June 2007) *Communique of the 14th OCC meeting*, available at http://www.occ.gov.au/releases/fourteenth_online_and_communications_council_communique accessed on 31 August 2008.

[349] Ibid, para 14.

- In response, the e-government strategies of all levels of government—in the past, now and in the future—are facilitating the collaborative sharing of information to ensure effective and efficient service delivery to the Australian community.

- Without an agreed national framework there is a risk that the current approaches will lead to fragmentation and inefficiencies in the sharing of information especially between jurisdictions.

- There is now a greater focus on the development of whole of government initiatives, such as the national water initiative and health, which demand collaboration between the jurisdictions and the provision of information from all the jurisdictions to enable a coherent and complete view of the sector. For example, for analysing certain diseases and where they occur.

- This proposal was initiated by representatives from the spatial community, where they have recognised that the information sharing problems they face are the same for all sectors government wide.

- A national information sharing strategy will provide a standardised approach to information sharing to support the delivery of government services to the Australian community.

- It is proposed to develop a national information sharing strategy that can be used by all portfolio areas at all levels of government. It will include Australian Government Information Management Office (AGIMO) existing products, such as the information and technical interoperability frameworks. Another framework that can be used is the National Service Improvement Framework which was developed by the jurisdictions and agreed to by OCC at its 2005 meeting.

- It is proposed that the strategy, and implementation options, be developed under the auspices of the Cross Jurisdictional Chief Information Officers' Committee (CJCIOC). Particular expertise may be needed from various sectors so the lessons learnt from their approaches can be incorporated in the development of the proposed strategy.

- It is anticipated that the proposed strategy, and associated implementation options, will be completed in time for presentation to the 2008 OCC meeting…

DISCUSSION OF ISSUES

1. Information sharing and interoperability is a topic of discussion or a work plan item in most of the Council of Australian Government's 42 ministerial councils. Examples include:
    - national security including counter terrorism, critical infrastructure protection and emergency management;
    - natural resources management
      - National Water Initiative
      - National Land and Water Resources Audit
      - National Action Plan for Salinity and Water Quality;
    - pandemic prevention such as the avian flu;
    - climate change;
    - health and ageing;
    - Crimtrac;
    - tourism; and
    - transport

2. There are numerous drivers for the flow of information between the states and territories and the Australian Government. A similar demand for information flow exists between states and territories and local governments, as it does between government agencies within any jurisdiction.

3. To support these information flows, a range of agreements and licences have been developed where each has tended to focus on an individual portfolio activity (such as the examples above). Such agreements have become complex, are inconsistent, and can carry potential legal risks particularly in the treatment of intellectual property and copyright. Consequently, the government processes and the information they need are not interoperable even before the interoperability/interconnectivity is discussed at the information or technical level.

4. Despite the vast majority of the information being in an electronic form and capable of being copied and/or made discoverable and accessible, there are few examples of successful information sharing initiatives at inter-jurisdictional level.

5. The health, education, water, spatial and natural resource management sectors are trying to solve these information sharing problems. For example, the spatial sector, which works across most government sectors, has developed a spatial data infrastructure for a spatially enabled government. The work was done cooperatively by ANZLIC-the Spatial Information Council and individual agencies in the Australian, state and territory governments and through research in universities. The work in the spatial sector is of particular importance because it impacts on all other sectors with 80 percent of government decisions including a 'where' or spatial factor.

6. There are a number of barriers to information exchange and interoperability.
   They include:
   • discoverability—the ability to locate information;
   • pricing and access policies including licensing arrangements;
   • information sharing—interoperability through collaboration;
   • standards including governance and uniform adoption;
   • digital rights management;
   • privacy issues;
   • custodianship, currency and quality of data;
   • costs of sharing;
   • cultural/organizational/jurisdictional considerations; and
   • different data sets developed in different software packages.

7. The proposed strategy will be informed by the work taking place in the spatial sector as well as other areas. It is proposed that the spatial sector be used as a test bed to inform the implementation plan for the strategy. This will further support initiatives to spatially-enable the governments of Australia and would be undertaken as a sub-project with a new, separate working group.

8. It may be necessary to have more than one type of implementation depending on the type of information.

……

12. The proposed strategy, and implementation options, will be developed through the CJCIOC and its working group the Cross Jurisdictional Interoperability Working Group. Representatives of other organisations may need to be included to enable the expertise of particular sectors to be incorporated.[350]

The NISS proposal was progressed by the Australian Government Information Office (AGIMO) in 2008, through consultations with a range of Commonwealth, State and Territory government representatives. It was anticipated that the NISS proposal, along with implementation options, would be presented to a 2008 meeting of the OCC.

The 15th meeting of the Online and Communications Council, held in Canberra on 21 May 2008, focused on future development and use of broadband in Australia. The Joint Communique of the 15th OCC meeting stated:

> Members agreed that a cooperative approach between all tiers of government is vital to the effective use and evolution of the National Broadband Network, once a successful tenderer is chosen. Members noted that the National Broadband Network has the potential to be a key enabler for all jurisdictions to transform and enhance access to government services and information, realise productivity benefits, and foster the development and use of new and innovative services and applications.

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[350] Online and Communications Council (OCC) (June 2007) *Communique of the 14th OCC meeting*, available at http://www.occ.gov.au/releases/fourteenth_online_and_communications_council_communique accessed on 31 August 2008.

National Broadband Network proponents have been asked to demonstrate a clear upgrade path for the network to meet future consumer demand and service developments to at least 2020 and preferably beyond.

Members agreed to develop a cooperative and collaborative approach identifying priority areas for further work, as well as addressing impediments to the possible effective use and evolution of the National Broadband Network. In particular, members noted this could include action by individual governments to:

- augment the National Broadband Network by further developing the capability of the infrastructure or extending it through complementary network infrastructure

- provide digital content in priority areas, such as health and education, emergency services, cultural institutions and general government service delivery which can be delivered by the National Broadband Network

- transform the nature and delivery of key government applications and services in, for example, local government, education and health

……

Building on broadband

Members welcomed the announcement of the new *Building on Broadband* initiative, and agreed to contribute towards a small number of strategically focused broadband projects. They will build on and add value to already successful collaborative Clever Networks projects and other funding initiatives delivered by the Australian, state, territory and local governments. Members agreed to identify projects which could be leveraged by the *Building on Broadband* initiative and contribute constructively to ensure practical and valuable outcomes are achieved.[351]

"Strategic Roadmap for Australian Research Infrastructure", Australian Government, Department of Innovation, Industry, Research and Science (2008)

The *Strategic Roadmap for Australian Research Infrastructure* ("2008 Strategic Roadmap") was released by Senator Kim Carr, Minister for Innovation, Industry, Science and Research, on 4 September 2008. The 2008 Strategic Roadmap built upon the 2006 NCRIS Strategic Roadmap and outlined areas in which strategic infrastructure investments should be made over the next five to 10 years:[352]

Over the past four years, a major change has taken place in the way that Australia plans and prioritises investment in research infrastructure. A new mode of investment has emerged that recognises the need to deliver infrastructure that supports priority research areas and is available to researchers across Australia. This new approach is strategic in nature, encourages a collaborative approach, and provides Australia with the national research facilities and linkages needed to address the economic, social and environmental challenges of the 21st century.

Australia's approach to infrastructure investment draws together organisations in the higher education, government, non-profit and business sectors. These linkages ensure that research outcomes are translated into tangible national benefit such as increased productivity and the development of new products by business, and the improved management of health, environment and security issues by government. The National

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[351] Online and Communications Council (OCC) (May 2008) *Joint Communique of the 15th OCC meeting*, available at http://www.minister.dbcde.gov.au/media/media_releases/2008/038 accessed on 31 August 2008.
[352] Australian Government, Department of Innovation, Industry, Science and Research, *Strategic Roadmap for Australian Research Infrastructure,* August 2008, page viii at http://www.innovation.gov.au/ScienceAndResearch/Documents/Strategic%20Roadmap%20Aug%202008.pdf accessed 8 September 2008.

> Collaborative Research Infrastructure Strategy (NCRIS) has been a catalyst for this change. This significant investment in infrastructure funding has been based on new ways of thinking about how Australia can plan and invest in facilities and networks that support world class research across the innovation system.
> ……
>
> This strategic, collaborative approach to investment has been largely embraced and supported by the research community, and provides a starting point for future research infrastructure programs. [353]

The 2008 Strategic Roadmap reaffirmed that the 12 capabilities established in the 2006 NCRIS Roadmap continue to be priority areas for investment.[354] However, the 2008 Strategic Roadmap reflected the following developments:

- increased emphasis on eResearch, in recognition of the pervasive and underpinning relevance of ICT to research;
- identification of a new capability in the Humanities, Arts and Social Sciences (HASS) in relation to HASS eResearch infrastructure including data creation and digitisation of research materials; and
- consideration of four areas in the 2006 Roadmap for which there had previously been insufficient funding to advance:

  - reaffirming the need for investment in Translating Health Discovery into Clinical Application;
  - supporting investment in a redefined capability relating to Disaster and Hazard Testbeds;
  - supporting further scoping of investment needs relating to A Sustainable Energy Future and Heavy Ion Accelerators.; and
  - identifying a need for investment in research infrastructure relating to the Built Environment.[355]

The key findings of the 2008 Strategic Roadmap, based on consultations and input from stakeholders, include:

- The capabilities identified in the 2006 Roadmap are supported as appropriate and continue to be priorities.
- A number of additional needs identified across key areas result in a reshaping and, in the most part, a supplementing of elements in individual capabilities.
- Humanities, Arts and Social Science are specifically recognised as an important capability area, in view of this research area's significant contributions to national outcomes.
- The significance of information and communication technologies as an underpinning and pervasive capability is strongly acknowledged.
- The inclusion of data itself as collaborative research infrastructure is highlighted.
- The grouping in this Roadmap of related priority areas further recognises and emphasises the linkages between specific capabilities (see Section 6).
- A range of challenges, enablers and considerations (see Appendix B) were brought to light during the review that are relevant to the efficient and effective conduct of a collaborative infrastructure program.[356]

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[353] Ibid, Executive Summary, p vii at http://www.innovation.gov.au/ScienceAndResearch/Documents/Strategic%20Roadmap%20Aug%202008.pdf.
[354] Ibid.
[355] Ibid.
[356] Ibid, p 9.

The 2008 Strategic Roadmap acknowledged the Australian Government's support of collaborative eResearch, open access and data sharing:

Importance of research
The Australian Government is committed to supporting research and its role in the discovery of ideas, solving problems, and enabling new applications and technologies. Research undertaken in universities, publicly funded and not-for-profit research agencies, state and territory government agencies, and industry contributes to the knowledge economy, to boosting our innovation performance and enabling Australia to compete at a global level. Research as a contributor to innovation needs to be appropriately resourced, whether this is in relation to the research activity itself, the research skills or the research infrastructure. In helping address national challenges and increasingly global science and social questions, researchers require an environment that encourages and enables creativity in their work and in the way their work takes effect…

Collaboration is increasingly important
There is increasing acceptance - in the context of high demand but limited resources - that collaborative approaches have a key role to play in contributing to the delivery of research outcomes. It is becoming clear that bringing researchers together, across institutional, disciplinary and geographical boundaries - both national and international - generates new and particular opportunities for science and social breakthroughs through access to a greater collective intellectual capital.

Collaborative research infrastructure
There are economic and efficiency arguments for taking collaborative approaches to establishing research infrastructure that enables world-class research. In the main, single institutions on their own cannot achieve the levels of research infrastructure needed to support such research. Economically, it makes sense for universities, state, territory and federal governments, non-profit research institutes and business to cooperate in implementing these research infrastructure investments. Efficiency gains reside not only in avoiding duplication in the creation of the infrastructure, but also in optimising its use, such that a piece of research infrastructure can be used to its maximum available capacity. To promote this greater use of the infrastructure, access regimes should provide for infrastructure to be broadly available to researchers across Australia. An added benefit of the collaborative environment created by joint investment and development of the infrastructure is that it encourages the host institution to implement such open access regimes.[357]

Finally, the 2008 Strategic Roadmap identified lessons learned to date which are relevant for future program implementation:

Enabling infrastructure in integral and requires specific consideration
Experience from the implementation of the 2006 Roadmap has shown that some elements are common to all or most capabilities, and must be present and well-resourced for the capabilities to advance. These elements apply generically in the way they enable the development of capabilities and include: information and communications technology (ICT); skills and expertise; and governance and management models to drive and direct the implementation of a capability…

Open access models encourage uptake
To promote greater use of the infrastructure, access regimes that provide for infrastructure to be broadly available to researchers across Australia were found to be necessary. This includes access by government, non-profit and private sector researchers. Access and pricing models should continue to provide access to the funded research infrastructure for publicly funded researchers, including regional users and researchers in small institutions, at marginal cost on the basis of merit. An added benefit of the collaborative environment created by joint investment and development of the infrastructure is that it encourages the host institution to implement such open access regimes…

Cross-capability linkages are vital
Linkages between capabilities can be facilitated through: collaborative approaches to planning and developing investments that build relationships; researchers' improved access to each other and facilities, including

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[357] Ibid, pp 3-4.

collections; and the support for research collaboration and projects. The dominating and essential element to support such linkages is ICT, in particular the collaborative tools, networks, and mechanisms to facilitate the sharing of data.[358]

"Venturous Australia – Building Strength in Innovation", Review of the National Innovation System, Cutler & Company for the Australian Government Department of Innovation, Industry, Science and Research (2008)

On 9 September 2008, Senator Kim Carr, Minister for Innovation, Industry, Science and Research, released the report of the Review of Australia's National Innovation System, *Venturous Australia – Building Strength in Innovation* (the Cutler Review Green Paper).[359] The Review was commissioned on 22 January 2008 and was conducted by an expert panel chaired by Dr Terry Cutler. The panel held open public hearings around Australia, convened a series of workshops addressing specific issues and considered more than 700 written submissions.[360]

The report made 72 recommendations ranging across many areas, including innovation in business, strengthening people and skills, excellence in national research, information and market design, and taxation. The key recommendations relating to government and PSI are in chapter 7 of the report, "Information and market design":

> **Unlocking public information and content**
>
> Governments and public agencies are centrally involved in the provision of research, information and content across a very broad range of activities. For some years now, both commercial and policy focus has turned towards the economic and social benefits flowing from open access to these resources, and by contrast, the potential costs and 'value damming' that can be involved in 'business as usual' models where content is more tightly held.
>
> Much work has been done by other national governments and international organisations on the development of policies and systems to enable public sector information access and reuse.[361]
>
> Open access requirements are increasingly being introduced by research funding organisations and research institutions worldwide.[362] To date progress in Australia has been patchy and lacking the comprehensiveness and boldness of leading countries such as the UK. Australian activities aimed at enabling information access and reuse have largely focused on two key areas: spatial data and publicly funded research outputs (whether in the form of publications or data). Much of the impetus for access to public sector materials has come from the

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[358] Ibid, p 12.

[359] Cutler & Company, *Venturous Australia – Building Strength in Innovation,* Review of the National Innovation System, Report for the Australian Government Department of Innovation, Industry, Science and Research, 29 August 2008, licensed under a Creative Commons Attribution-Non Commercial-No Derivative Works 2.5 Australia Licence, available at http://www.innovation.gov.au/innovationreview/Pages/home.aspx accessed on 11 June 2009.

[360] See "Release of the Review of the National Innovation System", Media Release, 9 September 2008, http://www.innovation.gov.au/Section/Innovation/Pages/ReleaseOfTheReviewOfTheNationalInnovationSystem.aspx accessed on 5 November 2008.

[361] Houghton, J., Steele, C. and Sheehan, P., *Research Communication Costs in Australia: Emerging Opportunities and Benefits.* DEST. 2006, at http://dest.gov.au/NR/rdonlyres/0ACB271F-EA7D-4FAFB3F7-0381F441B175/13935/DEST_Research_Communications_Cost_Report_Sept2006.pdf; Houghton, Steele and Sheehan concluded in their 2006 report that open access models of scholarly communication have the potential to increase the economic and social returns from public investment in R&D.

[362] For an international listing of open access mandates, see ROARMAP at http://www.eprints.org/openaccess/policysignup/. Some of the most significant initiatives have occurred in the European Union and in the United Kingdom.

spatial community. The most advanced policy on data access is the *Spatial Data Access and Pricing Policy* (2001) developed by the Office of Spatial Data Management[363] which forms the basis of the free data download services offered by Geoscience Australia.[364]

Along with the rise in support for access to information has come a growing recognition of the need for users to be able to search and interact with data and content. Legal frameworks must also be developed to facilitate access and reuse. This points to the need for an Australian National Information Policy (or Strategy) that optimizes the generation and flow of ideas and information in the Australian economy. As the National Competition Policy (NCP) involved systematically scanning Australian institutions to optimize the operation of competition to enhance outcomes so National Information Policy would scan Australian institutions to optimize the generation and dissemination of information for social and economic benefit.[365]

Support for development and implementation of a National Information Policy was expressed at forums held during the public consultation round table as well as in several written submissions with the spatial information industry being particularly supportive. Further government funded 'content' is generally in the same category as government funded information. Thus for instance, unless it seriously undermines its commercial objectives of sale of product, the ABC should err on the side of making its content available over the internet unless this has large opportunity costs. The presumption against free availability might be overcome where it would involve the foregoing of substantial commercial revenue from the sale of the content or there are large costs of hosting the necessary internet bandwidth (although in this latter case, peer to peer means of distribution should also be explored as should the diversion of funding from other activities and/or additional funding).

Australia is behind many other advanced countries in establishing institutional frameworks to maximise the flow of government generated information and content.

Recommendation 7.7
Australia should establish a National Information Strategy to optimise the flow of information in the Australian economy.

The fundamental aim of a National Information Strategy should be to:
- utilise the principles of targeted transparency and the development of auditable standards to maximise the flow of information in private markets about product quality; and
- maximise the flow of government generated information, research, and content for the benefit of users (including private sector resellers of information).

Recommendation 7.8
Australian governments should adopt international standards of open publishing as far as possible. Material released for public information by Australian governments should be released under a creative commons licence.

National collections
To drive cumulative knowledge creation researchers and others must have access to high quality data and information on developments not just in their field but beyond.
……
[M]any submissions… emphasised that national collections are a necessary foundation for research and innovation. National collections[366] are essential resources for researchers in all fields, from basic scientific research to the social sciences, humanities and creative arts. They play a vital role for educators (from pre-school to postgraduate) and for the broader community in building scientific, historical and artistic knowledge

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[363] See http://www-ext.osdm.gov.au/osdm/policy/accessPricing/SDAP.pdf and generally http://www.osdm.gov.au/OSDM/Policies+and+Guidelines/Spatil+Data+Access+and+Pricing/default.aspx.
[364] See https://www.ga.gov.au/products/servlet/controller?event=DEFINE_PRODUCTS.
[365] See Gans, J., *Caught short: Information controls kill opportunities*, "The Age", 5th August 2008. Gans argues that information such as the location of public toilets (toiletmap.gov.au), fuel price information, bus and train schedules, and television programming information should be available so that it can be repackaged using the latest technologies.
[366] These include cultural, geological, historical and zoological collections. They are referred to under different names, including archives, galleries, research repositories, libraries, museums, Indigenous knowledge and keeping places.

and literacy and in fostering cultural knowledge, identity and cohesion. Importantly, Australia has a number of unique and valuable assets, including marine, flora and fauna resources and indigenous collections that allow us to draw on the distinctive features of the Aboriginal and Torres Strait Islander traditional knowledge systems.

The Review has examined challenges in the provision, funding and maintenance of national infrastructure facilities and collections and identified the steps required to ensure their ongoing vitality and contribution to the national innovation system over the coming decades.

Recommendation 7.9
Funding models and institutional mandates should recognise the research and innovation role and contributions of cultural agencies and institutions responsible for information repositories, physical collections or creative content and fund them accordingly.

Recommendation 7.10
A specific strategy for ensuring the scientific knowledge produced in Australia is placed in machine searchable repositories be developed and implemented using public funding agencies and universities as drivers.

Recommendation 7.11
Action should be taken to establish an agreed framework for the designation, funding models, and access frameworks for key collections in recognition of the national and international significance of many State and Territory collections (similar to the frameworks and accords developed around Australia's Major Performing Arts Companies).
……
[B]oth for its direct and indirect benefits to Australia and for the greater global good, Australia should energetically and proudly maximise the extent to which it makes government funded content available as part of the global digital commons.

Further, it should lead globally by engaging other countries in a similar agenda.
……
Recommendation 7.14
To the maximum extent practicable, information, research and content funded by Australian governments – including national collections – should be made freely available over the internet as part of the global public commons. This should be done whilst the Australian Government encourages other countries to reciprocate by making their own contributions to the global digital public commons.[367]

Support for the key recommendations in the *Venturous Australia* Green Paper was expressed in *Communique from the National Academies Forum: Summary of a workshop in response to the Cutler Review of Australia's National Innovation System* on 11 September 2008. The National Academies Forum welcomed the *Venturous Australia* report and urged the Australian Government to act on its principal recommendations, stating:

The review's recommendations encouraging business innovation and **access to information** are welcomed and critically important.
……
Winning hearts and minds for innovation
Cultural change is necessary to promote engagement between industry and research institutions. The National Academies Forum welcomes the emphasis on promoting broad academic collaboration with industry, going well beyond the limited relationship of 'commercialisation of research' to one where industry and the research community participates actively in the full research and innovation cycle. **We endorse open access to**

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[367] Cutler & Company (2008) *Venturous Australia – Building Strength in Innovation,* Review of the National Innovation System, Report for the Australian Government Department of Innovation, Industry, Science and Research, August 2008, pp 93-98, 170-171, available at http://www.innovation.gov.au/innovationreview/Pages/home.aspx accessed on 5 November 2008.

research outputs to facilitate academic, industry and community-wide collaboration. The National Academies Forum will continue to act strongly as a vector to promote this access.[368] [emphasis added]

"Powering Ideas: An Innovation Agenda for the 21st Century", Department of Innovation, Industry, Science and Research (2009)

On 12 May 2009, as part of the Budget process, the federal government released the White Paper *Powering Ideas: An Innovation Agenda for the 21st Century*[369] in response to the *Venturous Australia* Green Paper. On the specific issues of access and reuse of PSI the White paper indicates broad agreement with the Cutler Review Green Paper's recommendations:

> Better information produces better decisions. The free flow of information fuels innovation. The Australian Government controls mountains of information, and it is determined to make more of this vast national resource accessible to citizens, businesspeople, researchers, and policy-makers.
> ……
> Commonwealth agencies such as the Australian Bureau of Statistics, the Bureau of Meteorology, and Geosciences Australia already gather, analyse, and disseminate information in the public interest. The Australian Government wants to build on this foundation.
> ……
> [acknowledging that policy issues around intellectual property rights, privacy, security, and costs need to be dealt with] the Australian Government is determined to work through these questions. It will start by taking steps to develop a more coordinated approach to Commonwealth information management, innovation and engagement involving the Australian Government Information Management Office and federal agencies.[370]

The *Powering Ideas* White paper also indicated the federal government's intention to make increased use of information and communications technologies, including Web 2.0 technologies, to improve policy development and service delivery.[371]

"Digital Economy: Future Directions", Department of Broadband, Communications and the Digital Economy (2008)

In December 2008, as part of an extensive consultation process the Department of Broadband, Communications and the Digital Economy released a consultation paper entitled *Digital Economy Future Directions*.[372] A key consultation topic in the paper was "Open Access to Public Sector

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[368] National Academies Forum, *Communique from the National Academies Forum: Summary of a workshop in response to the Cutler Review of Australia's National Innovation System,* 11 September 2008 at http://www.naf.org.au/11september08-summary.pdf.

[369] Australian Government, Department of Innovation, Industry, Science and Research, *Powering Ideas: An Innovation Agenda for the 21st Century,* 12 May 2009, http://www.innovation.gov.au/innovationreview/Pages/home.aspx accessed on 11 June 2009. Government Senator Kate Lundy, on the same day on which the White Paper was released (12 May 2009), addressed the CeBIT Access Conference. In her speech the Senator indicated that for a variety of reasons, including the current National Broadband Network initiative and the digital education revolution. The time was right for Kim Carr, the Minister for Innovation, Industry, Science and Research, to respond positively to the recommendations contained in the Innovation Report. For the full text of the Senator's speech see http://www.katelundy.com.au/category/public-speeches/.

[370] Chapter 6, (Public Sector Innovation) at p 53 available at http://www.innovation.gov.au/innovationreview/Pages/home.aspx.

[371] Ibid.

[372] See Australian Government, Department of Broadband, Communications and the Digital Economy, *Digital Economy Future Directions: Consultation Paper* (18 December 2008)

Information".[373]

The release of the *Digital Economy Future Directions* consultation paper was preceded by the publication, in September 2008, of a 14-page record of the Digital Economy Forum held in Melbourne on 10 September 2008. This record was published by the Internet Industry Association on its website. Prior to the Melbourne forum there had been three workshops attended by invited participants, which considered "capabilities, confidence and content, … likely developments and …aspirations for Australia's digital economy over the next five years".[374]

Speakers at the Digital Economy Forum emphasised the importance of taking steps to make PSI available for access and reuse and implementing recommendation 7.8 of the *Venturous Australia* Green Paper (the Cutler Review Green Paper):

> Alan Noble, Engineering Director, Google
> Representing the Content Workshop
>
> Top three priorities
>
> 1. Make public sector information (PSI) available
>   • Recommendation 7.8 of the Innovation Review also identifies this as a priority
>   • PSI is tax payer funded data
>
> 2. Improve content regulation environment
>   • Especially in terms of reducing copyright requirements and providing safe harbours
> ……
>
> How to achieve these priorities
>
> • PSI – adopt the Recommendation 7.8 of the Innovation Review is one 'safe' approach. Encourage the use of taxpayer funded data in mash ups.
>
> Next steps:
>
> • Free up public sector information by implementing Recommendation 7.8 of the Innovation Review
> …..
>
> Responses to questions
> ……
> • Access to public sector information is needed.[375]

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http://www.dbcde.gov.au/communications_for_business/Digital_Economy_Development/digital_economy_consultation accessed 22 May 2009.

[373] Ibid, p 3. Responses received by government during this consultation process informed the report, *Powering Ideas: An Innovation Agenda for the 21st Century*, the government's White paper response to the Venturous Australia Green Paper.

[374] Minister for Broadband, Communications and Digital Economy, Media Release, *Industry, business & Government drive digital economy future,* 10 September 2008, at http://www.minister.dbcde.gov.au/media/media_releases/2008/069.

[375] The Department of Broadband, Communications and Digital Economy had posted a 14-page overview of the Digital Economy Forum online, entitled, *Summary Notes, Digital Futures Forum,* 10 September 2008. However, this has now been taken down. See instead the recording of the relevant Panel Discussion in which Alan Noble makes the points above at http://www.youtube.com/watch?v=Mqr77mZrKUk at 12 June 2009. See also the Department of Broadband, Communications and Digital Economy website, "Future Directions of the Digital Economy" at http://www.dbcde.gov.au/digital_economy/digital_economy_consultation/future_directions_blog; Minister for Broadband Communications and the Digital Economy Senator Stephen Conroy's address to the Digital Economy Forum, Melbourne, 10 September 2008, http://www.minister.dbcde.gov.au/media/speeches/2008/address_to_the_digital_economy_forum,_melbourne; and the

"Australia's Digital Economy: Future Directions", Department of Broadband, Communications and the Digital Economy (2009)

On 14 July 2009, the Australian Government released the report *Australia's Digital Economy: Future Directions.*[376] The report explains the roles of government, industry and the community in developing strategies to improve digital engagement in Australia. It provides the rationale for government taking strategic and enabling action to ensure that all parts of Australia benefit fully from the digital economy.

As the Department of Broadband, Communications and the Digital Economy's website indicates, the final report and the accompanying "snapshot" (summary) report are both licensed to the public to use under the Creative Commons Attribution-NonCommercial-NoDerivativeWorks 2.5 Australia licence, which is consistent with the Digital Agenda policy set out in the report. A key issue raised for discussion in the *Digital Economy: Future Directions* consultation paper released in December 2008 was "Open access to Public Sector Information". As the Department noted at that time there is a growing level of support for "the notion that the Australian Government should provide access to public sector information on terms that clearly permit the use and re-use of that information."[377]

 Under the heading "Open access to public sector information for digital economy benefits", the *Australia's Digital Economy: Future Directions* report states:[378]

> The Australian Government recognises the digital economy and innovation benefits generated by open access to public sector information, subject to issues such as privacy, national security and confidentiality. Public sector information can include Government-produced data, such as Australian Bureau of Statistics (ABS) and geospatial data, and copyright protected materials, such as reports and other documentation. It can also include materials resulting from publicly-funded cultural, educational and scientific activities.

(Australian) Government 2.0 Taskforce (June 2009)

On 22 June 2009, Australia's Minister for Finance and Deregulation, Lindsay Tanner, launched the Government 2.0 Taskforce.[379] The Taskforce has been formed against a backdrop of increased interest by governments worldwide in the potential benefits of opening up access to and use of public sector information and in online engagement. The Taskforce is made up of members who are considered policy and technology experts from government, business, academia and cultural

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Internet Industry Association's (IIA) summary in their newsletter issue 13, Volume 1, 14 October 2008, http://www.iia.net.au/index.php/component/content/article/85/676-newsletter-issue-13-volume-1.html#2.

[376] http://www.dbcde.gov.au/?a=117295

[377]

http://www.dbcde.gov.au/digital_economy/future_directions_of_the_digital_economy/digital_economy_consultation_paper, p 3.

[378] http://www.dbcde.gov.au/?a=117295, p 12. Under this heading the Report refers, at page 13, to the Australian Bureau of Statistics use of CC (BY) licence for most of the data on its website and the Australian Broadcasting Commissions' Pool project using open access licensing. Open access initiatives by cultural institutions such as the Powerhouse Museum are also cited on page 13 of the paper.

[379] See http://gov2.net.au/2009/06/22/speech-launch-of-the-government-2-0-taskforce/.

institutions.[380]

The Taskforce will seek to increase the openness of government by making public sector information more widely available to promote transparency, innovation and community engagement. The Terms of Reference include advising and assisting the Australian Government to make government information more accessible and useable; to make government more consultative, participatory and transparent; and to build a culture of innovation within government.[381] In addition to providing this advice, the Taskforce has a $2.45 million Project Fund to fund initiatives and seed projects that demonstrate the potential of proactive information disclosure and digital engagement for government.

The Taskforce will meet regularly and will consult in an open and transparent manner and use online solutions for its engagement wherever possible. It will provide a final report on its activities to the Minister for Finance and Deregulation and the Cabinet Secretary by the end of 2009. In July 2009, the Government 2.0 Taskforce released for comment an Issues Paper, *Towards Government 2.0.*[382]

Ministerial Addresses and Media Releases

Significant developments in Australian government policies on access to and re-use of PSI, including spatial information, have often been the subject of important Ministerial addresses in recent years. Some of the key recent Ministerial addresses and media releases on access and reuse, including the role to be played by Web 2.0 technology and ICT more generally, are set out below.

"Open and Transparent Government - the Way Forward", Senator John Faulkner, Cabinet Secretary and Special Minister of State (2009)

On 24 March 2009, Senator John Faulkner the then Cabinet Secretary and Special Minister of State, delivered an address to the *Australia's Right to Know* Freedom of Speech Conference.[383]

 In this address the Minister announced that the Government was releasing exposure drafts of Freedom of Information (FOI) reform legislation which establishes an independent statutory office of the Information Commissioner. Under the draft FOI legislation the responsibilities of this new office include overseeing and ensuring compliance with a proposed new pro-active Commonwealth publication scheme, mandating a culture of openness under which information held by government agencies ought to be made available unless it is against the public interest to do so.

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[380] Taskforce website is: *http://gov2.net.au/*. The Chair is Nicholas Gruen (an economist/lawyer who was on the panel which reviewed the National Innovation System in 2008 and produced the Venturous Australia Green Paper (also known as the Cutler Review Green Paper or simply the Cutler Report)). Included in the distinguished 15 Members are the Australian Government's Chief Information Officer, officers from the National Archives, Microsoft and Google, and Professor Brian Fitzgerald (of QUT and leader of the OAK Law Project – www.oaklaw.qut.edu.au).

[381] http://gov2.net.au/about/.

[382] See http://gov2.net.au/consultation/2009/07/17/towards-government-2-0-an-issues-paper/.

[383] Faulkner J, Senator, Special Minister of State, speech on *Open and Transparent Government – the Way Forward*, Australia's Right To Know Freedom of Speech Conference, Sydney, 24 March 2009, http://www.smos.gov.au/speeches/2009/sp_20090324.html accessed on 11 June 2009.

In outlining the strategic changes intended to be implemented through passage of the draft legislation the Minister stated**:**

> These reforms will recognise the importance to Australia's democracy of, as the proposed new objects of the Act state, "increasing public participation in Government processes, leading to better informed decision making; increasing scrutiny, discussion, comment and review of the Government's activities" and increasing "recognition that information held by the Government is to be managed for public purposes, and is a national resource".
>
> ……
>
> Although the modernisation of the FOI Act contained in this draft is extensive, there are two main components which go directly to the Government's goal of creating a pro-disclosure culture in the Australian Public Service. They are the establishment of the independent statutory office of the Information Commissioner; and the proposed new Commonwealth Government publication scheme.
>
> ……
>
> The Labor Party took to the last election a commitment for the establishment of an Office of the Information Commissioner – a whole-of-government clearinghouse for complaints, oversight, advice and reporting for freedom of information and privacy matters, bringing together the existing role of the Privacy Commissioner, a new Freedom of Information Commissioner, and the new Information Commissioner.
>
> This draft legislation fulfils that election commitment.
>
> The Office of the Information Commissioner, and the FOI Commissioner in particular, will drive cultural change in the Australian Public Service and in Government.
>
> The Freedom of Information Commissioner will be, for the first time, an independent champion of FOI, charged with overseeing agencies' compliance with both the letter and the spirit of the legislation. At the same time the Office of the Information Commissioner will provide an independent high-level base from which cultural change can be driven throughout the public service - through training, education, advice, and feedback to agencies. The Commissioner will be charged with monitoring, investigating and reporting on agency compliance with the Act, reporting to the Minister on ways to improve the operation of the Act, and preparing guidelines on the operation of the FOI Act.
>
> ……
>
> The Information Commissioner will also have responsibility to oversee and ensure compliance with a new Commonwealth Government publication scheme.
>
> This publication scheme will require agencies to actively consider the types of information they have which can and should be made available to the public. It will not only encourage but mandate agencies to publish what they can lawfully publish – forcing a change of attitude to think about what they *should* be publishing rather than what they are *obliged* to. In other words, the publication scheme and the Information Commissioner's role in overseeing and ensuring compliance aims to bring a change in emphasis from agencies defining their publication of information by what is required, to a culture of openness where information ought to be made available unless it is against the public interest to do so.
>
> Agencies will be required to prepare plans indicating how they will comply with the publication scheme, including the format in which information will be published.
>
> We anticipate that the bulk of this material will be published on-line. When it comes to making information available, accessibility is an important consideration. Information that is 'public' but only available to those with the time and resources to search it out is effectively sequestered, in practice if not in law. The public sphere now includes the internet just as surely as it once included street-corner orators on soap-boxes.[384]

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[384] Ibid.

Other Ministerial Speeches Addressing Access to Public Sector Information in the Web 2.0 Environment and Use of Technologies

Hon. Lindsay Tanner MP, Minister for Finance and Deregulation, Video Address to CeBIT e-Government Forum (2009)

On 13 May 2009, the Hon. Lindsay Tanner MP, Minister for Finance and Deregulation, on 13 May 2009 delivered a video address at the Forum on e-Government, part of the CeBIT Conference.[385] The Minister referred to the way in which web 2.0 technologies will enable government to change the way it functions and to transform the way that government relates to ordinary citizens and to interest groups that have a major involvement in particular areas of policy. Web 2.0 functionality delivers new channels for public consultations by government with its citizens. The Minister mentioned the recent appointment by the Obama administration of the US Chief Information Officer designed to promote initiatives on greater use of public sector information and public consultation. The government is also seeking to learn from the UK government's initiatives in these areas. The aim is to use ICT to produce "better outcomes for Australians and better government processes and better contributions to making Australia a better country".

Senator Stephen Conroy, Minister for Broadband, Communications and the Digital Economy, CeBIT Australia 2009 AusInnovate Conference (2009)

On 12 May 2009, Senator Stephen Conroy, Minister for Broadband, Communications and the Digital Economy, delivered a speech to the CeBIT Australia 2009 AusInnovate Conference[386] in which he addressed the digital future and highlighted the diverse significant benefits for citizens, businesses and other organisations to be derived from the National Broadband Network (NBN) and connected digital technologies. The Minister cited various examples to demonstrate that ICT-enabled innovation, supported by high-speed broadband and emerging applications will lead to significant productivity gains across the Australian economy.

Senator Stephen Conroy, Minister for Broadband, Communications and the Digital Economy, Address to National Press Club (2009)

In a speech to the National Press Club on 28 April 2009 Senator Stephen Conroy described the far-reaching and transformative impact of digital technologies which will be enabled by the roll out of the National Broadband Network (NBN).[387] This speech provides good illustrations of how ICT will be used across a range of fields, including health, education and infrastructure to deliver increased efficiencies and productivity gains for business and the general community.

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[385] Tanner L MP, Minister for Finance and Deregulation, *Video Address to CeBIT e-Government Forum*, Forum on e-Government, CeBIT Conference, Sydney, 13 May 2009, http://www.financeminister.gov.au/speeches/2009/sp_20090513.html accessed on 11 June 2009.

[386] Senator Stephen Conroy, Minister for Broadband, Communications and the Digital Economy, *CeBIT Australia 2009 AusInnovate Conference*, 12 May 2009, http://www.minister.dbcde.gov.au/media/speeches/2009/015.

[387] Senator Stephen Conroy, Minister for Broadband, Communications and the Digital Economy, *Address to National Press Club*, 28 April 2009, available at http://www.minister.dbcde.gov.au/media/speeches/2009/013 accessed on 11 June 2009.

"Speech to the Open Access and Research Conference", Senator Kim Carr (2008)

In the opening video address to the Open Access and Research Conference in Brisbane on 24 September 2008, Senator Kim Carr, Minister for Innovation, Industry, Science and Research expressed support for the recommendations in the *Venturous Australia* Green Paper (the Cutler Review Green Paper) on open access to publicly funded research data and use of creative commons licences.[388]

> The Cutler Report on the National Innovation System contains several recommendations to make public information – including the fruits of publicly funded research – more accessible.
>
> It urges all Australian governments to adopt open publishing standards and creative commons licences.
>
> It says we should ensure that 'the scientific knowledge produced in Australia is placed in machine searchable repositories'.
>
> It argues that to 'the maximum extent practicable ... research ... funded by Australian governments ... should be made freely available over the internet as part of the global public commons'.
>
> These are all recommendations dear to my heart.
>
> It is my firm view that publicly funded research should be widely available to other researchers, industry and the general public.
>
> That doesn't just mean letting people search for keywords or abstracts.
>
> It means full, open access to research data and outputs.
>
> If we are serious about boosting innovation, we have to get knowledge and information flowing freely.
>
> The Government is weighing these recommendations and will respond to them in an Innovation Policy White Paper.
>
> If adopted, the review panel's recommendations will require a rethink of the push we've witnessed in recent years to have researchers commercialise their own discoveries.
>
> The jury is now in on this policy, and I think it can safely be declared a failure.
>
> Only a tiny number of patents held by a tiny number of institutions have made serious money anywhere in the world.
>
> Australian universities generally earn less than 1 per cent of their income from royalties, patents and licences.
>
> The Productivity Commission, the OECD, and most recently Professor Mary O'Kane's Review of the Cooperative Research Centres Program have all questioned the value of asking researchers and research institutions to do their own commercialisation.
>
> Not only have their efforts produced meagre results.

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[388] Senator Kim Carr, Minister for Innovation, Industry, Science and Research, *Speech to Open Access and Research Conference,* 24 September 2008, at http://minister.innovation.gov.au/Carr/Pages/OpenAccessandResearchConference.aspx.

They have in many cases been counter-productive.

To quote the OECD: 'commercialisation requires secrecy in the interests of appropriating the benefits of knowledge, whereas universities may play a stronger role in the economy by diffusing and divulging results.'

Or as Professor O'Kane puts it, "while the economic impact of the [CRC] Program has been considerable, it has been primarily through end-user application of research rather than direct commercialisation".

The overzealous protection of intellectual property rights in this environment raises the cost of knowledge to the community.

When that knowledge is created using tax-payer dollars, the community might reasonably feel that it has paid for it once already.

Making the results of publicly funded research freely available in a reasonable time is good for industry, good for the public and good for researchers themselves, whose work will be much more widely recognised and appreciated.

The Commonwealth is already funding the infrastructure needed to improve access.

We are investing $75 million in the Platforms for Collaboration component of the National Collaborative Research Infrastructure Strategy.

It supports infrastructure for collecting, storing, sharing and retrieving research data.

We are giving universities another $25 million to establish and upgrade knowledge banks through the Australian Scheme for Higher Education Repositories.

The Commonwealth has also contributed to the Open Access to Knowledge Law Project (OAKLAW) at Queensland University of Technology, which is developing legal protocols for managing the often complex copyright issues associated with open access.

As a net importer of knowledge and ideas, Australia has everything to gain from the kind of 'global digital commons' outlined in the Cutler report.

Public research funding agencies in Europe, the United States and the United Kingdom are already swinging in this direction.

To help maintain the momentum, Australia may want to consider making its own competitive research grants conditional on recipients sharing their research results through open access repositories – including the Internet.

This is just one idea, and I'm sure participants in the Open Access and Research Conference 2008 will have many more.

Thanks for this opportunity to speak to you.

I'm looking forward to continuing the conversation in the months ahead.[389]

"Carr favours open access", Bernard Lane, The Australian (2008)

Bernard Lane's article, published in The Australian on 24 September 2008, reported on Senator Kim Carr's[390] endorsement of open access to research funded by public bodies such as the ARC and

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[389] Ibid.

[390] Senator Kim Carr is the Australian Government Minister for Innovation, Industry, Science and Research: see http://www.innovation.gov.au.

NHMRC:

> INNOVATION Minister Kim Carr today will flag the possibility that researchers who win grants from public funding agencies will have to make their results freely available over the internet.
>
> "Australia may want to consider making its own competitive research grants conditional on recipients sharing their research results through open-access repositories," Senator Carr will say in a video address to the Open Access and Research conference in Brisbane.
>
> Funding agencies overseas, including the British Wellcome Trust and the US National Institutes of Health, have adopted mandatory open-access policies.
>
> The Australian Research Council and the National Health and Medical Research Council only encourage open access.
>
> In his innovation report, consultant Terry Cutler says: "(Open access) progress in Australia has been patchy and lacking the comprehensiveness and boldness of leading countries such as the UK."
>
> In his address Senator Carr strongly endorses Cutler's open access recommendations, saying: "If we are serious about boosting innovation, we have to get knowledge and information flowing freely."
>
> He says the push to have researchers commercialise their discoveries could "safely be declared a failure" as universities on average earned less than 1 per cent of their income from royalties, patents and licences.
>
> But Senator Carr told the HES the Government did not want to jeopardise the business done by commercialisation offices such as UniQuest, which had made a success of technology transfer.
>
> He said: "The ARC and the NHMRC distribute more than $1 billion of research funding each year."
>
> "Very few of those dollars end up as any part of an (intellectual property) deal ... so I don't think there should be any serious adverse effect ... but we want to look at that."
>
> UniQuest managing director David Henderson said some projects, such as the Gardasil cancer vaccine, would never get to market without the confidence that IP protection gave investors: "There needs to be an ability to exclude (from any open access policy) research that requires investment to get to product."[391]

Other Government and Government-funded Reports

"From Data to Wisdom: Pathways to Successful Data Management for Australian Science", Prime Minister's Science, Engineering and Innovation Council (PMSEIC) (2006)

The Prime Minister's Science, Engineering and Innovation Council (PMSEIC) was established as the federal government's principal source of independent advice on issues in science, engineering and innovation and relevant aspects of education and training.[392] During 2006, PMSEIC established the Data for Science Working Group to examine and advise on directions for managing the vast

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[391] Bernard Lane, 'Carr favours open access', *The Australian,* 24 September 2008, http://www.australianit.news.com.au/story/0,24897,24394990-15306,00.html accessed on 10 October 2008.

[392] See http://www.dest.gov.au/sectors/science_innovation/science_agencies_committees/prime_ministers_science_engineering_innovation_council/default.htm.

amounts of data now being generated from scientific research, observational projects, instruments, national and international collaborations, data mining and analysis.[393]

The 2006 report of the Data for Science Working Group, *From Data to Wisdom: Pathways to Successful Data Management for Australian Science,*[394] considered issues of access to and management of scientific data in government, universities and research institutions and centres.

The report acknowledges the considerable investment by Commonwealth and State/Territory governments in science (e.g. Backing Australia's Ability; Health and Medical Research funding; National Collaborative Research Infrastructure Strategy (NCRIS), Centres of Excellence; Cooperative Research Centres, State biotechnology and other investments), which needs to be accompanied by a commitment to ensuring that data are regarded as a vital asset to be used and managed for the greatest economic and social benefit.[395]

The PMSEIC Working Group recommended the implementation of national strategic frameworks for scientific data and associated digital repositories, in order to facilitate sharing and collaboration.

The Working Group's recommendations include that:

- Australia's government, science, research and business communities establish a nationally supported long-term strategic framework for scientific data management, including guiding principles, policies, best practices and infrastructure;

- the necessary policy and programmes be implemented with a view to establishing a sustainable publicly-funded national network of 'federated' digital repositories;

- the principle of open equitable access to publicly-funded scientific data be adopted wherever possible and that this principle be taken into consideration in the development of data for science policy and programmes. As part of this strategy, and to enable current and future data and information resources to be shared, mechanisms to enable the discovery of, and access to, data and information resources must be encouraged; and

- funding agencies offer incentives to encourage researchers and institutions to:
    - develop data management plans for each research grant application involving data collection and generation, and that standards be made freely available and widely disseminated so as to encourage best practice in data management;
    - introduce policies and practices to encourage collaboration and sharing of data across Australia's scientific research institutions and across agencies; and
    - analyse and re-use existing data.[396]

The report presented to the 16th meeting of PMSEIC proposes a comprehensive agenda for change and in particular aims to address generic issues to ensure that Australia has a systemic approach to the major challenges faced, and makes the most of its opportunities to enable the best use of data for

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[393] Prime Minister's Science, Engineering and Innovation Council (PMSEIC) Working Group on Data for Science (December 2006) *From Data to Wisdom: Pathways to Successful Data Management for Australian Science,* p 9, available at http://www.dest.gov.au/NR/rdonlyres/D15793B2-FEB9-41EE-B7E8-C6DB2E84E8C9/15103/From_Data_to_Wisdom_Pathways_data_man_forAust_scie.pdf and http://www.dest.gov.au/sectors/science_innovation/publications_resources/profiles/Presentation_Data_for_Science.htm.

[394] Ibid.

[395] Ibid, p 9.

[396] Ibid, pp 11-13, cited in Australian Government Productivity Commission (2007) *Public Support for Science and Innovation, Productivity Commission Research Report,* 9 March 2007, p 230, available at http://www.pc.gov.au/__data/assets/pdf_file/0016/37123/science.pdf.

science.

The report identifies 11 recommendations which fall under the following themes:

- National strategic framework for scientific data;
- National network of digital repositories;
- Data management, access, sharing and collaboration – changing the culture; and
- Skills for data management.[397]

The report overview states:

> The recommendations are aimed mostly at governments at all levels, and their agencies which fund or produce data. But they are also relevant to the community of scientists and researchers in universities, institutions and centres, and to those in non-government and business environments who are also committed to Australia being more socially at home in our region and as part of the global picture.[398]

Key amongst the recommendations of relevance in the present context of spatial information are:

Recommendation 1

That Australia's government, science, research and business communities establish a nationally supported long-term strategic framework for scientific data management, including guiding principles, policies, best practices and infrastructure.
……

Recommendation 5

That standards and standards-based technologies be adopted and that their use be widely promoted to ensure interoperability between data, metadata, and data management systems, providing authentic users of the data with appropriate processes and safeguards.

Recommendation 6

That the principle of open equitable access to publicly-funded scientific data be adopted wherever possible and that this principle be taken into consideration in the development of data for science policy and programmes. As part of this strategy, and to enable current and future data and information resources to be shared, mechanisms to enable the discovery of, and access to, data and information resources must be encouraged.

Recommendation 7

That funding agencies offer incentives to encourage researchers and institutions to:
- develop data management plans for each research grant application involving data collection and generation, and that standards be made freely available and widely disseminated so as to encourage best practice in data management;
- introduce policies and practices to encourage collaboration and sharing of data across Australia's scientific research institutions and across agencies; and
- analyse and re-use existing data.

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[397]See
http://www.dest.gov.au/sectors/science_innovation/publications_resources/profiles/Presentation_Data_for_Science.htm
at 23 July 2008.
[398] Prime Minister's Science, Engineering and Innovation Council (PMSEIC) Working Group on Data for Science (December 2006) *From Data to Wisdom: Pathways to Successful Data Management for Australian Science,* p 9, available at http://www.dest.gov.au/NR/rdonlyres/D15793B2-FEB9-41EE-B7E8-C6DB2E84E8C9/15103/From_Data_to_Wisdom_Pathways_data_man_forAust_scie.pdf.

Recommendation 8

That funding agencies such as the NHMRC and ARC ensure that best practices and policies are developed and followed that allow bona-fide researchers to access individual population data, including the integration and linking of data from multiple sources, whilst protecting privacy, and ensuring that ethics committees fully understand these policies and their rationale.

Recommendation 9

That in the context of developing the strategic framework for scientific data management, Australia's intellectual property approaches be checked to ensure they do not impede the sharing of data. In particular, it should take into account the OECD Committee for Scientific and Technological Policy guidelines on access to research data and the International Council for Science statements about the benefits of sharing data.[399]

"Spatially Enabling Australia: A vision for the future of the spatial information industry", ACIL Tasman (2007)

The 2007 report, *Spatially Enabling Australia: A vision for the future of the spatial information industry,*[400] commissioned by the Australian Spatial Business Association (ASIBA) from economic consultancy ACIL Tasman, presented evidence about the value of the spatial information industry to the Australian economy and made 10 recommendations, including that governments should invest in an Australian Spatial Data Infrastructure (ASDI) and adopt nationally consistent spatial information standards and interoperability mechanisms. The report found that the spatial information and technology sector is worth billions to the Australian economy, contributing to increased productivity across a broad range of business activity, and adding $6 to $12 billion to the Gross Domestic Product. Among the constraints on the spatial information industry, the report identified privacy, data pricing and property rights as issues that needed to be addressed.

The report's key findings and recommendations were summarised in an ASIBA media release dated 31 October 2007, *National first: new study says spatial industry worth billions to GDP*:[401]

Economic impacts of the spatial industry

Almost all industries and governments at all levels benefit from spatial information. The case studies presented discuss a wide range of important economic benefits to government and industry from the use and application of spatial information systems. Key net benefits derive from:

- faster discovery of minerals and petroleum resources in the more difficult areas for mineral exploration
- faster provision of land and infrastructure which is highly important to provision of housing, urban development
- faster provision of new infrastructure to the resources sector

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[399] Ibid, pp 11-12.

[400] ASIBA, *Spatially Enabling Australia: A vision for the future of the spatial information industry,* Canberra, 31 October 2007.

[401] ASIBA, Media Release, *National first: new study says spatial industry worth billions to GDP,* 31 October 2007 at http://www.asiba.com.au/clients/asiba/UserFiles/File/Media%20Releases/Press%20Release301007.pdf accessed 31 August 2008.

- improved transport planning and management
- safer air and sea transport
- vastly improved systems for asset management
- more efficient management of utilities and infrastructure
- better environmental and natural resources management
- more efficient production in agriculture fisheries and forestry
- more efficient management of threats from pests and disease in agriculture
- higher levels of security from terrorism
- more efficient and timely emergency management systems
- more effective marketing and retail planning
- better decision making and policy formulation and implementation.

……

Biosecurity and environmental benefits

……

The value of spatial information systems in natural resource management, water trading and climate trading markets was not assessed in the economic modelling. However, given the imperatives in these areas, it is likely to be large both in economic terms as well as in terms of sustainable systems and conservation values.

Future potential

Important future developments in spatial information are likely to further enhance its economic impacts, primarily in relation to the following:

- the falling cost of acquiring data
- the continuing developments of computing power making more applications and richer data analysis possible
- the arrival of spatial information applications in the consumer mainstream.

This potential is tempered by several threats, including those noted as constraints elsewhere in this report such as inappropriate data pricing policies and a lack of awareness of potential spatial applications, as well as emerging problems of data property rights and privacy issues.

These threats could easily extinguish valuable options for future economic prosperity, growth and industry development. Most critical is the threat to Australia's competitive advantage over the longer term if it falls behind in this area.

Policy issues and recommendations

The Australian Spatial Information Business Association (ASIBA) advocates a national reform agenda in which government, business and the community can act in concert to promote and achieve the greater spatial enablement of the economy and society.

A national reform agenda for spatial information needs to be considered at the highest national level, by the Council of Australian Governments (COAG).

Australia's progress towards being a modern spatially enabled economy has been hampered by lack of a coherent national focus, and the lack of a process for developing and executing whole-of-government solutions to inefficiencies in the spatial information supply chain. [emphasis added]

International competitors such as Canada and the European Union have implemented models that harness the resources of both industry and government, both financial and in-kind; and actively engage the community as to its needs.
……

Recommendation 4

COAG should develop and implement policies to expand the quality and quantity of available fundamental spatial information as well as maintain its currency and accuracy. Consultation with key stakeholders, including ASIBA, should be undertaken as a key element of the policy so that priorities are user driven, not "producer" driven.

Recommendation 5

The Australian Government should fund the next stage of the development of the spatial data infrastructure at a cost of $200 million over ten years.

Recommendation 6

Business should be actively engaged in constructing the spatial data infrastructure through a partnership programme with government – with funding to be matched with in-kind contributions coordinated through ASIBA.

Recommendation 7

Industry and governments should collaborate on developing digital rights management architectures appropriate for Australia and publish guidelines on the standards to be adopted.

Recommendation 8

The Australian Government should fund a programme to address constraints on information sharing, such as the lack of a whole-of-government approach to licensing. [emphasis added]

Recommendation 9

The Productivity Commission should review the pricing policies for spatial information as they apply to each jurisdiction and, once the findings have been considered, each jurisdiction should address any policy inconsistencies.

Recommendation 10

Value-added services should, as a general principle, be the province of the private sector unless public interest considerations dictate otherwise, such as in certain public safety or security matters.

Recommendation 12

The Online and Communication Council should be the forum for coordinating and implementing the national reform agenda for the spatial industry. A central agency within the portfolio responsibility of the Commonwealth Minister on the Council should be responsible for administering the reform programme and implementing policy at the Commonwealth level.

"Building the Infrastructure for Data Access and Reuse in Collaborative Research: An Analysis of the Legal Context", Dr Anne Fitzgerald and Kylie Pappalardo, Open Access to Knowledge (OAK) Law Project and Legal Framework for e-Research Project (2007)

The Open Access to Knowledge (OAK) Law[402] and Legal Framework for e-Research[403] projects, established as part of the Research Information Infrastructure Framework for Australian Higher Education under *Backing Australia's Ability*, deal with the legal issues involved in managing open access publication of research papers and data so as to enable access and reuse. The projects are based at the Queensland University of Technology (QUT) under the leadership of Professor Brian Fitzgerald.

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[402] OAK Law Project website: http://www.oaklaw.qut.edu.au/.
[403] Legal Framework for e-Research Project website: http://www.e-research.law.qut.edu.au/.

In June 2007, the OAK Law Project and the Legal Framework for e-Research Project published the report, *Building the Infrastructure for Data Access and Reuse in Collaborative Research: An Analysis of the Legal Context* ("the Building the Infrastructure Report").[404] The Preface states:

> The Report was commenced in October 2006 as a response to the growing interest worldwide in data sharing as a driver of innovation and the emergence of the National Collaborative Research Infrastructure Strategy (NCRIS). It has expanded in its scope along the way in order to accommodate policy developments both in Australia and overseas.
>
> The Report overviews and examines the fundamental legal issues surrounding data sharing in the context of case studies based on prominent data sharing networks. Most importantly, it also provides a strategy for further work in this area.[405]

The Building the Infrastructure Report examines the legal framework within which research data is generated, managed, disseminated and used. Early on, it considers how the terms "data", "information", "e-Research", "ownership", "control", "access" and "use" are defined. The report provides an overview of the operation of copyright law, contract and confidentiality laws, as well as a range of legislation - privacy, public records and freedom of information legislation – that is of relevance to research data. It then examines how these legal rules apply to define rights in research data and regulate the generation, management and sharing of data.

The Building the Infrastructure Report also describes and explains current practices and attitudes towards data sharing. A wide array of databases is analysed to ascertain the arrangements currently in place to manage and provide access to research data. The report encourages researchers and research organisations to adopt appropriate management and legal frameworks for research data outputs. It provides practical guidance on the development and implementation of legal frameworks for data management and data sharing infrastructure, with the objective of ensuring that research data can be accessed and used by other researchers.

"Legal and project agreement issues in collaboration and e-Research: Survey Results", Maree Heffernan and Nikki David, Legal Framework for e-Research Project (2007)

In 2007, Queensland University of Technology's Faculty of Law (as part of the Legal Framework for e-Research Project) conducted a national online survey which was designed to explore the nature of e-Research and collaborative research in the Australian context. The survey was open to all Australian participants involved in collaborative research.

The survey aimed to explore the nature of research collaborations and to identify common legal and project agreement problems encountered in forming research collaborations in order to form strategies to facilitate and streamline the process of e-Research in the Australian context. Specifically, the aims of the survey were to:

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[404] Dr. Anne Fitzgerald and Kylie Pappalardo (2007) *Building the Infrastructure for Data Access and Reuse in Collaborative Research: An Analysis of the Legal Context*, OAK Law Project and Legal Framework for e-Research Project, June 2007, available at http://eprints.qut.edu.au/archive/00008865/01/8865.pdf.
[405] Ibid, Preface by Professor Brian Fitzgerald, page i.

- identify e-Research activities and levels of engagement;
- understand the nature of the collaborative research landscape;
- investigate characteristics of informal collaborations and agreements; and
- explore legal issues related to data and databases.

The intent was that the survey data would be used to form strategies to facilitate and streamline the process of collaborative e-Research. The survey results were presented in the report, *Legal and project agreement issues in collaboration and e-Research: Survey Results.*[406] This report documents the survey results according to research discipline, addressing issues such as:

- whether survey participants consider formal agreements to be necessary when undertaking collaborative research;
- problems encountered in negotiating formal agreements;
- participants views of the commercialisation of research;
- participants use of databases; and
- whether participants are willing to make their data available to other researchers.

The Antarctic Treaty (1959)

Several international treaties concerning the environment have data and information access and sharing provisions.[407] Of these treaties the one that has received most attention in Australia is the Antarctic Treaty, signed in Washington DC in 1959.[408]

The primary purpose of the Antarctic Treaty is to ensure:

> …in the interests of all mankind that Antarctica shall continue forever to be used exclusively for peaceful purposes and shall not become the scene or object of international discord.[409]

To promote this outcome the Treaty prohibits military activity, except in support of science; prohibits nuclear explosions and the disposal of nuclear waste; promotes scientific research and the exchange of data; and holds all territorial claims in abeyance.[410] The importance of scientific collaboration and data are recognised in the recitals to the treaty:

> *Acknowledging* the substantial contributions to scientific knowledge resulting from international cooperation in scientific investigation in Antarctica;

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[406] Maree Heffernan and Nikki David (2007) *Legal and project agreement issues in collaboration and e-Research: Survey Results,* Legal Framework for e-Research Project, Queensland University of Technology, August 2007, available at http://eprints.qut.edu.au/archive/00009112/01/9112.pdf.

[407] Other international treaties with such provisions include the UN Convention on the Law of the Sea, the Ozone Protocol, the Convention on Biodiversity and the Aarhus Convention.

[408] Signed Washington, 1 December 1959; Entry into force for Australia and generally: 23 June 1961 [1961] ATS 12 (Australian Treaty Series, 1961 No. 12). See http://www.austlii.edu.au/cgi-bin/sinodisp/au/other/dfat/treaties/1961/12.html?query=antarctic. The original parties to the Treaty were the 12 nations active in the Antarctic during the International Geophysical Year of 1957-58 - South Africa, Belgium, Japan, United States of America, Norway, France, New Zealand, Russia, Poland, Argentina, Australia and Chile.

[409] See http://www.scar.org/treaty/.

[410] Ibid.

Convinced that the establishment of a firm foundation for the continuation and development of such cooperation on the basis of freedom of scientific investigation in Antarctica as applied during the International Geophysical Year accords with the interests of science and the progress of all mankind;

Of particular relevance is Article III of the treaty, which states:

1. In order to promote international cooperation in scientific investigation in Antarctica, as provided for in Article II of the present Treaty, the Contracting Parties agree that, to the greatest extent feasible and practicable:

(a) information regarding plans for scientific programs in Antarctica shall be exchanged to permit maximum economy and efficiency of operations;
(b) scientific personnel shall be exchanged in Antarctica between expeditions and stations;
(c) scientific observations and results from Antarctica shall be exchanged and made freely available.

2. In implementing this Article, every encouragement shall be given to the establishment of cooperative working relations with those Specialized Agencies of the United Nations and other international organizations having a scientific or technical interest in Antarctica.

"Scientific Committee on Antarctic Research (SCAR) Data and Information Strategy 2008 – 2013", Joint Committee on Antarctic Data Management (JCADM) and Standing Committee on Antarctic Geographic Information (SC-AGI) (2008)

The draft *SCAR Data and Information Strategy 2008 – 2013,* authored by Kim Finney of the Australian Antarctic Data Centre, Australian Antarctic Division[411] (revised up to May 2008), provides an overview of initiatives directed at establishing online data access networks that are relevant to SCAR members, including:

*   IODE Ocean Data Portal (http://www.iode.org);
*   SeaDataNet (http://www.seadatanet.org/);
*   Global Biodiversity Information Facility - GBIF (http://www.gbif.org/);
*   Ocean Biogeographical Information Systems - OBIS (http://www.iobis.org/) and SCAR-MarBIN (http://www.scarmarbin.be/);
*   BioMoby (http://www.biomoby.org/);
*   The Geosciences Network - GEON (http://www.geongrid.org/index.php); and
*   SuperDarn (http://superdarn.jhuapl.edu/).[412]

The report draws attention to the difficulty of implementing Article III.1(c) of the Antarctic Treaty while there is a lack of consistent open access polices and practices among SCAR member countries:

3.2.2 Gated vs Public Access To Data

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[411] *Scientific Committee on Antarctic Research (SCAR) Data and Information Strategy 2008 – 2013*, Joint Committee on Antarctic Data Management (JCADM) and Standing Committee on Antarctic Geographic Information (SC-AGI) (authored by Kim Finney, Australian Antarctic Data Centre, Australian Antarctic Division (revised May 2008), p 40, http://www.jcadm.scar.org/fileadmin/filesystem/jcadm_group/Strategy/SCAR_DIM_StrategyV2-CSKf_final.pdf accessed on 29 August 2008.

[412] Ibid at pp 24 – 25.

It could be argued that the Antarctic Metadata Directory (AMD) has not so far achieved the acceptance levels hoped for with SCAR scientific groups because it has focused on metadata content when what is really desired is a discovery mechanism that leads to direct access to those data that have been returned as a result of the user's search criteria. Being able to achieve such a goal, however, requires that there must be a genuine willingness on the part of investigators to make their data widely accessible, and that they will link these data to the metadata records. Not all scientists are willing to provide that link, despite their countries signing up to the Antarctic Treaty which states that "*to the greatest extent feasible and practicable" ... "scientific observations and results from Antarctica shall be exchanged and made freely available*". The level of conformance with this aspiration is patchy, and responsibility for meeting the aspiration must to a great extent rest at the local level with individual national Antarctic programmes. Where national scientists work in SCAR programmes, there is likely to be a greater degree of international data exchange than where that is not the case.

Investigators, when questioned privately, will often agree to "gated" access to their data but not "public" access. If "gated" access is required, so that only an investigator's closest collaborators can gain access to specific datasets, variable levels of authentication must be built into the systems we are using. Currently this is not the case. Implementation of secure authentication systems is not impossible, but is a technological challenge where the user domain is spread across geographical and organisational boundaries and the number of potential security groups that any single user can belong to is highly variable. Simple password protection, while not particularly secure, is a much easier technology to implement.

An issue open for debate is whether the AMD would be more heavily patronised and seeded with accessible datasets, if it provided for optional secure access to hyperlinked datasets and whether the introduction of such a facility is even palatable given the public access obligations implied by the Treaty. SCAR's data policy is for free and unrestricted exchange. National policies may differ.[413]

The *SCAR Data and Information Strategy 2008 – 2013* highlights the need for a clearly enunciated data management policy to help clarify obligations with regard to data access, including a requirement for all SCAR-sponsored projects to produce a data management plan, if Article III.1(c) of the Antarctic Treaty is to be effectively implemented:

5.2 Policy, Governance, Partnerships & Coordination – Strengthening The Existing System

To help clarify obligations with regard to data access, SCAR requires a clearly enunciated data management policy that elaborates upon Article III 1-c of the Antarctic Treaty so that there is unambiguous guidance on what is expected of SCAR members in relation to data access and data management. Two suitable policies that can readily be adopted or adapted are the IPY Data Policy (http://ipydis.org/data/) and the IOC data exchange policy (http://www.iode.org). The creation of Data Management Plans for all major SCAR endorsed science projects should be a mandatory component of the SCAR policy. Governance aspects of SCAR data management need to be reviewed and the use of partnerships with existing networks should be aggressively pursued to bolster the resources and infrastructure available to SCAR science. In addition, to ensure that SCAR is well informed on the needs and activities of the wider Antarctic community, such as those involved in environmental management, JCADM should seek to involve groups requiring access to, or management of Antarctic science data. As a first step, the Commission for the Conservation for Antarctic Marine Living Resources (CCAMLR), Data Manager should be invited to join JCADM and the CCAMLR Data Centre should be asked to consider becoming an NADC node in the ADMS.

Recommendation: JCADM tasked to develop a SCAR Data Policy.

Recommendation: SCAR Executive to invite CCAMLR to join JCADM.[414]

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[413] Ibid at pp 26 – 27.
[414] Ibid, p 40.

Media Articles

"Hi-Tech Research Outpaces Law", Bernard Lane, The Australian (2007)

The following article was published in *The Australian* newspaper on 22 August 2007:

RESEARCHERS riding the wave of hi-tech collaboration may leave lawyers and policy makers in their wake, commentators have warned following what is believed to be the first survey of legal issues raised by e-research.

"One of the fears is that researchers out of their frustration will avoid the law," Queensland University of Technology legal academic Brian Fitzgerald said.

"Law is a part of cyber-research infrastructure. We need to explain to researchers why that's important."
In the QUT survey, released today, researchers complain that formal agreements for collaboration can take longer than the project; they prefer to work around university lawyers whenever they can; and they see the need for a plain English legal guide to the use of databases.

Although these complaints are familiar and not unique to e-research, they have become more acute because of a growing momentum in high-level collaborative projects, a snowballing of vast data sets and a big-ticket investment program for cyber-infrastructure.

"The moment's now for e-research because data is coming up everywhere and the value of the data rises as the volume rises," Australian e-Research Infrastructure Council executive director Rhys Francis said.

"The problem is really the policy framework. We need to simplify the framework; that is a greenfield issue."

The council, which met for the first time last month, will oversee $75 million of public spending.

This includes the start of work on an Australian Access Federation, which would replace cumbersome bilateral agreements for sharing access to scholarly resources throughout the sector with an automated system ultimately to be hooked into an international network.

E-research ranges from simple web-based collaboration through to open-access publishing, high-speed computing, global sharing of massive data sets and control of scientific instruments. Some observers say the term e-research will become redundant as technology reaches into all fields of research and makes the solo researcher a rare species.

The QUT survey, Legal and Project Agreement Issues in Collaboration and e-Research, involved 176 mostly university researchers, research managers, lawyers and others working in commercialisation offices.

One-third were "extensively involved" in e-research.

A common complaint was the delay and complexity involved in formal research agreements, with one researcher saying they "undermine the feeling of freedom and trust that energise a research program".

Another, complaining about university lawyers, said: "I now actively dissociate myself from the legal process at the outset and only intervene in the event that my IP rights look like vanishing."

Professor Fitzgerald, project leader for the Legal Framework for e-Research Project, which stands behind the survey, said: "Technology has moved ahead with great speed. We need to provide to the researchers the (legal) tools that are responsive to their needs."

To show what was at stake, he drew a parallel with music downloads, where practice fast outstripped the law.

"We'd rather the whole e-research system works from the get-go on a legal foundation," he said.

Ann Monotti, a Monash University authority on intellectual property law, said ownership of vast databases,

privacy and copyright, were among the issues raised by e-research. To what degree these were novel issues was unclear, but they were important because of the scale and accessibility of data now available. "It's quite clear that somebody ... has to look at this very carefully and make sure that all the legal and regulatory infrastructure is there, so that as e-research gains momentum the law keeps up with it," Dr Monotti said.

She warned against researchers embarking on commercially promising collaborative projects without taking proper legal advice.

Some researchers in the QUT survey did see a role for formal agreements and most expressed interest in a simple guide to law affecting shared use of databases. This would be "a fascinating question, given that Australia is one of the very few jurisdictions relying on copyright as the relevant property right for databases", said one research manager.[415]

"Private eyes on public data", Dylan Bushell-Embling, The Age and The Sydney Morning Herald (2007)

On 25 September 2007, the feature story, *Private eyes on public data*, by Dylan Bushell-Embling, was published in *The Age*[416] and *The Sydney Morning Herald*.[417] The article begins:

'INFORMATION Wants to Be Free" has been one of the rallying cries of the internet for years. Another well-known truism "Information is Power" dates back to the decidedly pre-internet English courtier Sir Francis Bacon.

But there is an ongoing debate over whether Australian governments - which gather vast reams of information every year - are doing enough to share their bounty with the rest of us.

Scott Powell is one who thinks not.

Mr Powell is an Australian entrepreneur and founder of the HandMap Network, selling mapping software and GPS-enabled maps to a global customer-base. The company is Australian-based, and Mr Powell lives in Melbourne. The company offers maps from all over the world - and beyond. For $5, each customer can even purchase two maps of the moon.

But not Australia.[418]

It continues:

Today the US Government has gone one better, offering all that data free. In Australia, spatial data of this sort primarily originates from either state, territory or federal governments. But Australian governments have traditionally treated spatial information, as with much of its accumulated Public Sector Data (PSD), as primarily a revenue source.
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[415] Bernard Lane, 'Hi-Tech Research Outpaces the Law', *The Australian,* 22 August 2007, available at http://www.theaustralian.news.com.au/story/0,25197,22285146-12332,00.html.

[416] See http://www.theage.com.au/news/technology/private-eyes-on-public-data/2007/09/24/1190486224755.html?page=fullpage accessed on 27 August 2008.

[417] See http://www.smh.com.au/news/technology/private-eyes-on-public-data/2007/09/24/1190486224755.html?page=fullpage accessed on 27 August 2008.

[418] Dylan Bushell-Embling, 'Private eyes on public data', *The Age* and *The Sydney Morning Herald*, 25 September 2008, available at http://www.theage.com.au/news/technology/private-eyes-on-public-data/2007/09/24/1190486224755.html?page=fullpage and http://www.smh.com.au/news/technology/private-eyes-on-public-data/2007/09/24/1190486224755.html?page=fullpage accessed on 27 August 2008.

Every time Mr Powell has tried to expand into the Australian market, he's found the cost of procuring the raw data he needs far too expensive, and restrictions on how he may reuse the data far too constraining.

"I never was able to license the data," he says.

Mr Powell's experience echoes those of other businesses that have tried to profit from Australian PSD. Business attempts to profit by on-selling products and services developed using government data have often failed because of high data costs.

As well as an immediate economic impact, there are fears that this approach will hamper innovation.

Terry Cutler, principal of the specialist consulting firm Cutler & Company and CSIRO board member, believes that in an information age, a dearth of cheap access to government data can stifle the entire country's economic growth.

"Governments by their functions are one of the biggest users and creators of information and knowledge," he says. "If we do live now in what is essentially a knowledge-based economy, clearly access and use of information on the widest possible basis has to be a premise for a successful economy in this new world."

BUSINESSES wanting widespread access to and re-use of PSD face another barrier beyond access and cost - the often complicated set of licensing agreements attached to the data.

"Generally in Australia a compilation of data will have some copyright attached that the government will own," says QUT professor Brian Fitzgerald. This copyright is combined with department-set restrictions on what can be done with the data to create a licensing agreement that must be signed before the data can be accessed.

Because various departments' licensing regimes were developed independently, they are often very disparate. Differing state laws just make the problem worse.

"It's likely that across Australia there are dozens if not hundreds of different licence agreements that need to be signed up to in order to permit a data-set to be moved from government to a private sector user," says Peter Woodgate, CEO of the Co-Operative Research Centre for Spatial Information.

One Queensland government study identified 20 different licences from a mere five departments.

However government is not blind to the problem. Politicians and bureaucrats across all levels of government are considering ways to make more information freely available.

"In Australia there are a number of government departments that are already seriously looking at how government data should be released to the public and made more accessible," Professor Fitzgerald says.

The change of heart rippling throughout all levels of government is primarily brought on by two economic arguments. The first is that governments collect data using taxpayer money.

"The citizenry have already paid for the data once, why should they have to pay for it again?" asks Steve Matheson, the head of the National Statistical Service Leadership Branch at the ABS. "Especially considering the marginal cost of electronic delivery."

The second argument is that the potential economic benefits of releasing government data free far outweigh the funds accrued by selling the data.

"People have started to question whether charging at the front - in a sense having a gate - is the best model," Professor Fitzgerald says. "Or whether it's best to allow more people to go through the gate and then try to multiply the downstream quantifier: allowing the data to flow; allowing new industries to emerge around the data, thereby raising more economic value for government and the community."
……

"One of the questions (being asked) is whether government, if it were to release data in a free and open manner, should think about using what we call open content licences," Professor Fitzgerald says.

Open content licences, Professor Fitzgerald says, "give a permission in advance to allow people to take information away under certain conditions and reuse it."

THE most famous examples of open content licences are the Creative Commons (CC) licences. They are designed to facilitate sharing and reuse of intellectual property while protecting the IP holder's copyrights, and have been in development since 2001.

Licences exist to cover a gamut of restrictions IP holders may like to place on their property - IP holders may specify, for example, that their data is free to use for non-commercial purposes, or that it can be used for any purpose.

The CC licences are so robust that many users are recommending departments adapt CC licences for government data.

Mr Cutler says this line of thinking represents a fundamental shift in attitude. "It's actually reversing the current policy frameworks, which basically say we release information publicly as an exception. Information by default should be openly accessible unless there's a compelling reason why it shouldn't be."

A handful of government departments are already experimenting with offering free PSD.

Since 2005, the Australian Bureau of Statistics (ABS) has offered nearly all its statistical information at no charge on its website, partly because of this argument. Mr Cutler calls the decision to remove charges for ABS data "the best thing the Federal Government's done in recent times".

Special Minister of State Gary Nairn notes the decision to release all ABS data for the cost of reproduction was not the first such experiment in Australian government. Mr Nairn says he's seen the economic benefits of releasing data for free.

"I was behind a push, not long after I got elected in 1996, to get data from what is now Geoscience Australia available at the cost of reproducing it," he says. "That's been very successful. It's cost the government maybe a couple of million (dollars) or something in revenue that it used to get, however the economic activity as a result of that (overshadows the loss)."

The biggest winners of the decision to release free PSD are companies working with geospatial data.

"Talking to different geospatial companies who work in the field," Mr Nairn says, "they say, 'it's given us so many additional opportunities to market our services for projects that wouldn't get going if we didn't have a hold of some decent data at a reasonable cost'. If they had to spend a lot of dough getting the data they may not take that punt in the first instance."

A few branches of government are also planning to experiment with adapting CC licences for their data sets.

THE Queensland Government has commissioned a project exploring the possibility of adapting the licences for the entire state's PSD. The Queensland Spatial Information Council (QSIO) is working with Professor Fitzgerald and other government departments on the project.

"I think the CC licences absolutely provide a robust platform," Mr Cutler says. "And I know the Victorian Government and parts of the Federal Government have been looking at this as well. So I think there's an emerging consensus (to adapt CC licences)."[419]

In summation in a break-out box, the article sets out three "reasons for change":

Reasons for change

Spatial data is the most common battleground for arguments over free PSD. Why?

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[419] Ibid.

1: There's a lot of it.

"About 80 per cent of government information is spatial data," Terry Cutler says. The Federal Government and all state and territory governments have at least one and, in some cases, multiple mapping agencies. Spatial data also includes meteorological and cadastral data.

2: It has a major impact on the economy.

"(Spatial data) has an impact on just about every industry and government activity in terms of improving productivity, but it's also an industry in its own right," says Alan Smart, marketing director of economic consultancy firm Acil Tasman. Mr Smart, who is leading research into the impact spatial data has on our economy, says technological advances in spatial data are "transforming the economy in a way that email and the internet transformed the communications sector".

3. There has already been action.

The Queensland Government may soon be the first state government to incorporate CC licences for spatial data. The Federal Government agreed in 2001 to make most of its geospatial data available free in the public domain as part of the Spatial Information Access Agenda.. Pressure is also coming from the industry itself, with bodies such as the Australian Spatial Information Business Association eager to convince state governments of the potential advantages.[420]

Australia to gain from open access to research, Anna Salleh, ABC Science Online (2008)

In an article published on ABC Science Online on 26 September 2008, Science Journalist Anna Salleh reports on the Open Access and Research Conference in Brisbane held in Brisbane from 24 to 26 September 2008:

Australia is poised to take a lead in the move to free up the results of publicly-funded research, say international experts.

The comments follow an expression of support by Federal Science Minister Kim Carr for making Government-funded research freely available on the internet under a creative commons licence - one of the recommendations in the recently-released Cutler Report on innovation.

"As a net importer of knowledge and ideas, Australia has everything to gain from the kind of 'global digital commons' outlined in the Cutler report," Senator Carr told the Open Access and Research Conference in Brisbane this week by video link.

"The Government is weighing these recommendations and will respond to them in an innovation policy white paper."

UK open access expert Dr Alma Swan is among a number of conference participants who welcome the minister's comments.

"I think it's important that the Government has decided this is a major issue and that Australia is going to take the lead," said Dr Swan from scholarly communications consultancy, Key Perspectives Limited.

Dr Swan says less than 20 per cent of publicly-funded research is freely available.
One reason for this low level is that research is often published in academic journals, which have costly subscription rates.

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[420] Ibid.

These costs exclude those in less advantaged institutions and community-based health professionals from having access to the latest research in their field.

Medical scouts

Dr Swan adds that the public is also increasingly wanting direct access to scientific research.
For example, people affected by medical conditions can be highly motivated to scout out useful information.

She gives the example of US patient advocate, Sharon Terry, who is the mother of two children with an extremely rare genetic disease.

"Her family doctor knew nothing about it and couldn't help her," Dr Swan said.
Ms Terry was driven to find out what she could to get some kind of treatment and stimulate research to help her sons.

But she found research referred to on the internet was inaccessible.

"Every time she went to get the paper she was up against the publisher's barrier and had to pay $US30 or something if she wanted to see it," Dr Swan said.

Ms Terry is now president of Genetic Alliance, an organisation that campaigns for open access to research.

In response to pressure from researchers and the community, the US National Institutes of Health (NIH) last year mandated that all its researchers deposit a copy of their published research in the freely accessible online PubMed database, an approach pioneered in 2003 by the Queensland University of Technology (QUT).

Publisher opposition

Dr Swan says some publishers are opposed to open access and are trying to reverse the NIH mandate in the US arguing their copyright is being infringed.

The Association of American University Presses and the American Society of Publishers are currently lobbying in support of a bill in their favour.

Dr Swan says access to public research should not be restricted because it might hurt a private industry, describing the copyright argument as "fallacious".

Instead she suggests that researchers, their institutions or benefactors should be able to pay publishers for the publishing service they perform, while still retaining the right to freely share the research funded by the taxpayer.

Swan says a Creative Commons licence would help in this new arrangement.

John Wilbanks, executive director of the US-based Science Commons project of Creative Commons describes the Cutler report proposals as "unprecedented and visionary".
"If implemented it really gives Australia the chance to be first in the world," he said.

Commercialisation

Dutch open access researcher Frederika Welle Donker says a further constraint on open access to publicly-funded research comes from Government researchers trying to commercialise their research.

But Senator Carr says this is a "failed" strategy.

"If adopted, the [Cutler report's] recommendations will require a rethink of the push we've witnessed in recent years to have researchers commercialise their own discoveries," she said.

"To quote the OECD: 'commercialisation requires secrecy in the interests of appropriating the benefits of knowledge, whereas universities may play a stronger role in the economy by diffusing and divulging results'."[421]

Other Papers and Books

"Open Content Licensing: Cultivating the Creative Commons", Professor Brian Fitzgerald, Jessica Coates and Suzanne Lewis (eds), (2007)

This book is a collection of papers presented at the Creative Commons conference held at Queensland University of Technology (QUT) in January 2005.[422] It provides a valuable snapshot of thinking at that time on the use of open content licensing in relation to various kinds of materials, including information produced or funded by the public sector. Of particular relevance in the present context are the address, *The Government's Role in Supporting Creative Innovation*, by the Hon. Linda Lavarch MP (former Queensland Attorney-General but at that time Parliamentary Secretary assisting the Minister for State Development and Innovation, Hon. Tony McGrady MP),[423] and the presentations in the session, *Why Governments and Public Institutions Need to Understand Open Content Licensing*, by Professor Tom Cochrane, Professor Stuart Cunningham, Dr Terry Cutler, Dr Anne Fitzgerald, and Neale Hooper.[424] Dr Cutler, Dr Fitzgerald and Mr Hooper discussed the appropriateness of abolishing or restricting Crown Copyright as proposed by the Copyright Law Review Committee in its *Crown Copyright* inquiry, or whether access to government information would be better served by the adoption of an effective open content licensing strategy such as the use of Creative Commons licences.[425]

"Legal Framework for e-Research: Realising the Potential", Professor Brian Fitzgerald (ed), (2008)

On 11 and 12 July 2007, the Legal Framework for e-Research Project hosted the Legal Framework for e-Research Conference at the Gold Coast. Seven international keynote speakers, together with prominent Australian research identities, provided insightful, encouraging and challenging perspectives on the issues to be considered for the development of an effective legal framework that facilitates e-Research.[426]

In 2008, Sydney University Press (SUP) published the conference papers in the book entitled *Legal Framework for e-Research: Realising the Potential*[427], edited by the conference convenor, Professor

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[421] Anna Salleh, *Australia to Gain from Open Access to Research*, 26 September 2008, at http://www.abc.net.au/news/stories/2008/09/25/2374371.htm.

[422] Professor Brian Fitzgerald, Jessica Coates and Suzanne Lewis (eds) (2007) *Open Content Licensing: Cultivating the Creative Commons*, Sydney University Press, available at http://eprints.qut.edu.au/archive/00006677/.

[423] Ibid, p 69.

[424] Ibid, p 74.

[425] Ibid.

[426] The slides of many of the presentations can be accessed on the Legal Framework for e-Research Project website at http://www.e-research.law.qut.edu.au/conference.

[427] Professor Brian Fitzgerald (ed) *Legal Framework for e-Research: Realising the Potential*, Sydney University Press, 2008, available at http://eprints.qut.edu.au/archive/00014439/.

Brian Fitzgerald. Chapters in the book include:[428]

- *The Fifth Dimension*, Dr Chris Greer;
- *Innovation and Open Access to Public Sector Information*, Dr Terry Cutler[429];
- *Cyber Infrastructure for the Humanities and Social Sciences*, Professor John Unsworth;
- *Designing Institutional Infrastructures for e-Science*, Professor Paul David and Professor Michael Spence;
- *Understanding the Legal Implications of Data Sharing, Access and Reuse in the Australian Research Landscape*, Professor Anne Fitzgerald, Kylie Pappalardo and Anthony Austin;
- *Open Data for Global Science*, Paul F Uhlir and Peter Schroder;
- *NIH Data and Resource Sharing, Data Release and Intellectual Property Policies for Genomics Community Resource Projects*, Claire Driscoll;
- *Cyberinfrastructure for Knowledge Sharing*, John Wilbanks;
- *A Win:Win for Data Access: Balancing Public Good with Privacy Concerns*, Professor Fiona Stanley;
- *Privacy Regulation and e-Research*, Andrew Hayne;
- *A Primer in the Politics of Privacy and Research*, David Ruschena; and
- *e-Research and Jurisdiction*, Gaye Middleton.

The Legal Framework for e-Research Conference (11 and 12 July 2007) was followed by the *Australian National Summit on Open Access to Public Sector Information* held at the Queensland Parliament House on the 13th of July 2007.

Copies of *Legal Framework for e-Research: Realising the Potential* are available online for downloading under a Creative Commons licence.[430]

"Innovation and Open Access to Public Sector Information", Dr Terry Cutler in "Legal Framework for e-Research: Realising the Potential", Professor Brian Fitzgerald (ed), (2008)

On 13 July 2007, Dr Terry Cutler presented a paper, *Innovation and Open Access to Public Sector Information*, at the Australian National Summit on Open Access to Public Sector Information held at Queensland Parliament House. The paper was subsequently published in *Legal Framework for e-Research: Realising the Potential*, a book of conference papers edited by Professor Brian Fitzgerald.

Dr Cutler refers to data and information "the currency of creativity and innovation"[431], observing that "[i]nnovation is critical to the competitiveness and sustainability of our economy and society."[432] On access to PSI, Dr Cutler comments:

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[428] All chapters are available online at http://eprints.qut.edu.au/archive/00014439/.
[429] See below.
[430] Professor Brian Fitzgerald (ed) *Legal Framework for e-Research: Realising the Potential*, Sydney University Press, 2008, available at http://eprints.qut.edu.au/archive/00014439/.
[431] Ibid, p 25.
[432] Ibid, p 28.

The originator, owner or custodian of information or data may not be best placed to understand the possible uses or potential future uses of the information or data they hold. Waste and the destruction of value may occur because government sets rules of access to information which fail to recognise the requirements of unforeseen users and uses. Furthermore, the rules of engagement between government and the initial agent – the immediate user or use– may unintentionally constrain the beneficial use by third parties or eventual end-users in the process of the diffusion of knowledge or innovation…

[C]ertain freedoms are essential to creativity and innovation. The first is the freedom to access and use prior art and knowledge in the exploration and development of new knowledge and insights. It is obvious that open access underpins this freedom. Equally important, however, is the freedom to operate and adapt in the process of deployment and diffusion. The extent of this freedom will depend on what rules and conditions are imposed by the owners of an innovation. The terms of access to information and data will dictate the extent of further experimentation and development. This becomes particularly important when an innovation can usefully be packaged or integrated with other products or services. Systems integration is an increasingly significant platform for innovation, especially in the services sector…

Why is open access to public sector information important for innovation? I have argued that it is important because knowledge and information flows underpin creativity and innovation. It is especially important in a small country economy like Australia because of the relative scope and scale of public sector information. The public sector is a major – even the dominant -producer and custodian of information. Furthermore, only government and the public sector have the critical mass to create inclusive public platforms and scalable repositories. Ironically, open access policies could also help resolve the chronic problems with 'silo' barriers to information sharing *within* government – promoting greater 'whole of Government' effectiveness.[433]

He concludes:

Information infrastructure and information architectures are crucial in an information society. Government information policies should promote:

- 'freedoms to operate' – 'unfreedoms' are the enemy of development and innovation; and
- open, end-to-end access as a fundamental premise of infrastructure.

The wise administration of public sector information can create significant economic benefits through strengthening the national innovation system. By its own practice, governments can help shape the rules and conduct of wider information markets. As with most things, however, the devil is in the detail. The utility of public information to users will be determined by the terms of access, including the efficacy of arrangements for such things as:

- information exclusions – open access should be the default setting;
- searchability and discovery;
- transparency of language and code;
- transaction costs; and
- the preservation of information and its long-run accumulation.

Good outcomes will require us to approach the principles of access from the perspective of prospective users, and with a keen regard to the potential obstacles and bottlenecks to the effective use of public sector information.[434]

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[433] Ibid, pp 31, 33 and 38.
[434] Ibid, p 39.

States and Territories

At the State and Territory level there is a lack of consistency in policies on access to and reuse of government information and data. State and Territories have developed their own policies on information access and reuse and, in recent years some have also implemented policies on dealings with public sector intellectual property. There is a broadly held view that since public sector information (PSI) has been produced through the expenditure of public funds, it should be made available to citizens and businesses.[435] However, while access is generally supported, there are differences in how this is achieved in practice and in the pricing models applying in the various jurisdictions. As Davies and Rowlatt commented in 2004, "the main driving force in many states … is opening up access, rather than market development".[436]

Much of the discussion about access to and reuse of PSI at the State and Territory level has focused specifically on spatial information, in the context of work on the development of spatial data infrastructures.[437]

Renate Mason observed in *Developing Australian Spatial Data Policies,* that:

> [o]ne of the difficulties in providing public access to spatial data is not so much a technological problem but rather an organisational and policy problem. It is difficult to develop national policies when state and local spatial data access policies vary. [438]

In *a Proposal for a Commonwealth Policy on Spatial Data Access and Pricing,* the Commonwealth Interdepartmental Committee on Spatial Data Access and Pricing (IDC) pointed to the need for the adoption of common policies on access and pricing if an Australian Spatial Data Infrastructure was to be established:

> ANZLIC is developing the Australia Spatial Data Infrastructure (ASDI) to facilitate access to and the use of fundamental spatial data produced by the various agencies (dataset custodians) in the States, Territories and Commonwealth. While ANZLIC has been successful in defining and developing the technical architecture of the ASDI, linking the various jurisdiction systems, it has not been able to develop a national spatial data pricing policy. Most of the States and Territories have now developed whole-of-government spatial data pricing

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[435] Rob Davies and Mary Rowlatt, *Report on the ePSINet Visit to Australia (9 – 15 May 2004),* p 4.

[436] Ibid.

[437] See generally S Jacoby, S Smith, L Ting, and I Williamson, *Developing a Common Spatial Data Infrastructure between State and Local Government - An Australian case study*, International Journal of Geographical Information Science, vol. 16, no. 4, pp 305-322; B Thompson, T Chan, R Slee, P Kinne, A Jahshan, P Woodgate, I Bishop and D McKenzie, *Virtual Australia: its key elements – know, think, communicate,* International Journal of Digital Earth, vol. 1, issue 1, January 2008 at pp 66-87, available at http://www.informaworld.com/smpp/content~content=a790360558~db=all~order=page. See also K McDougall, *Unlocking The Potential of Spatial Information Through Data Sharing – It's A Two Way Street,* Queensland Spatial Conference 2008, 17-19 July 2008, Gold Coast; M Warnest, K McDougall, A Rajabifard and I Williamson, *Local and state-based collaboration: the key to unlocking the potential of SDI,* Centre for Spatial Data Infrastructures and Land Administration, Spatial Sciences 2003; and A Rajabifard, A Binns and I Williamson, *Creating an Enabling Platform for the Delivery of Spatial Information,* Proceedings of SSC 2005 Spatial Intelligence, Innovation and Praxis: The national biennial Conference of the Spatial Sciences Institute, September 2005, Melbourne, Spatial Sciences Institute.

[438] Renate Mason, *Developing Australian Spatial Data Policies – existing practices and future strategies,* PhD thesis, School of Geomatic Engineering, UNSW, 2000, p 43, available at http://www.library.unsw.edu.au/~thesis/adt-NUN/uploads/approved/adt-NUN20021106.165932/public/01front.pdf and http://arrow.unsw.edu.au/vital/access/manager/Repository/unsworks:512?start=346 accessed 9 September 2008.

policies, defining pricing (cost recovery) and licence (copyright protection) conditions for their data. The current Commonwealth policy was developed in 1995, but has limited scope and has not been applied in a consistent manner. … The various State, Territory and Commonwealth policies are generally based on recovering the cost of transfer, with royalties being paid to the data owner or custodian for commercial exploitation by commercial value-adders. The policies often differentiate between data types, users and applications, with different licence/access fees and licence terms for each circumstance.[439]

The implementation of ANZLIC's 1999 *Policy Statement on Spatial Data Management* had a significant impact in the States and Territories, bringing about substantial reductions in the cost of accessing spatial data. For example, in the ACT, the cost of the entire cadastre was reduced from $25,000 to $2,000 by 2001 (although there was still a minimum charge of $200 to cover the cost of extracting and supplying the data).[440] In Queensland, the Department of Natural Resources and Water implemented a whole-of-department policy on access and pricing for the department's products, publications and services. The review of pricing policy led to a reduction in the cost of digital cadastral data by up to 95%;[441] by 2001, a 12 month licence for whole-of-state access to the digital cadastral database had been reduced from $1.75 million to $125,000.[442]

Queensland, New South Wales and Western Australia have also implemented intellectual property guidelines for public sector agencies which deal with management and commercialisation of public sector intellectual property. In NSW, the Department of Premier and Cabinet has published a Copyright Management Tool-kit to facilitate the implementation of proper management practices in relation to public sector copyright. In Victoria, the Auditor-General's performance audit report, *Managing Intellectual Property on Government Agencies* (2005),[443] recommended more explicit recognition, management and application of intellectual property in the public sector. The report's key recommendation that a central agency be appointed to coordinate the implementation of all the recommendations has not been adopted. As a result, implementation of the report's recommendations has not been consistent across Victorian Government agencies to date.

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[439] *A Proposal for a Commonwealth Spatial Data Access and Pricing Policy: The report of the Commonwealth Interdepartmental Committee on Spatial Data Access and Pricing,* June 2001, p 2; available at http://www.osdm.gov.au/OSDM/Policies+and+Guidelines/Spatial+Data+Access+and+Pricing/default.aspx accessed 14 September 2008.

[440] Ibid, Attachment E, p 53.

[441] Renate Mason, *Developing Australian Spatial Data Policies – existing practices and future strategies,* PhD thesis, School of Geomatic Engineering, UNSW, 2000, p 44, http://www.library.unsw.edu.au/~thesis/adt-NUN/uploads/approved/adt-NUN20021106.165932/public/01front.pdf and http://arrow.unsw.edu.au/vital/access/manager/Repository/unsworks:512?start=346 accessed 9 September 2008.

[442] *A Proposal for a Commonwealth Spatial Data Access and Pricing Policy: The report of the Commonwealth Interdepartmental Committee on Spatial Data Access and Pricing,* June 2001, Attachment E, p 54.

[443] *Auditor-General's Report: Managing intellectual property in government agencies*, Government Printer, Melbourne, 2005, available at http://catalogue.nla.gov.au/Record/3546851 accessed on 29 May 2009.

Queensland

Beginning with the formation of a Survey and Mapping Industry Coordination Committee in 1979, the Queensland Government has been instrumental in providing spatial information infrastructure, support and resources to industry, academia and the wider community.

"Pricing Principles", Queensland Government, Department of Natural Resources (1999)

The Queensland Government's Department of Natural Resources (DNR) (and its successor departments) is responsible for the spatial management of various areas such as land, water, and native vegetation. DNR began implementing Information Standard 33 (IS33) in July 1999, publishing a set of Pricing Principles. The application of these principles brought about a large reduction in the price of a licence for the Digital Cadastral Database (DCDB) for the entire State to the users and data brokers, from $1.75 million to $125,000.[444] Under the licence, users were permitted to on-supply the DCDB data without requiring royalties to be paid.

The DNR Pricing Principles are reproduced in Renate Mason's PhD thesis, *Developing Australian Spatial Data Policies* (2000):

> 1. **Contribution to Queensland** – DNR pricing should support and contribute to the goals of the State Strategic Plan and DNR Corporate Plan.
>
> 2. DNR pricing should not inhibit access to information for economic value adding activity nor achievement of ecologically sustainable development.
>
> 3. **Contribution to DNR** – The aggregation of the "new" revenue stream to the Department from the Pricing Framework should match that of the "old" revenue total.
>
> 4. The Pricing Framework should ensure that access to information does not undercut statutory revenue streams to Queensland Treasury (i.e. by private providers offering discounted prices through brokering).
>
> 5. **Contribution to customers** – DNR pricing should be simple and easy to understand for customers; pricing should be seen to be "fair" by customers – as such, all customers should be viewed as equal and preferential treatment avoided.
>
> 6. DNR pricing should be certain and predictable over the next 5 to 10 years to provide distribution/brokers a reasonable planning environment.
>
> 7. Pricing should facilitate reasonable access to customers and members of the community.
>
> 8. The pricing framework will align with the development of distribution/brokerage arrangements, which enable the ultimate end user to access products and service incorporating DNR information. DNR will provide some retail presence to avoid "market failure" and ensure Community Service Obligations are met.

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[444] Renate Mason, *Developing Australian Spatial Data Policies – existing practices and future strategies,* PhD thesis, School of Geomatic Engineering, UNSW, 2000, p 147, http://www.library.unsw.edu.au/~thesis/adt-NUN/uploads/approved/adt-NUN20021106.165932/public/01front.pdf and http://arrow.unsw.edu.au/vital/access/manager/Repository/unsworks:512?start=346 accessed 9 September 2008.

9. **Considerations within DNR** – DNR product and service lines are rationalised and aggregated into "like" categories using similar pricing points.

10. The provision of digital data is to be formalised under a Licence Agreement containing pricing and conditions under which another party may use the data.

11. Pricing based on the apportionment of costs is the preferred method as it reflects a more accurate usage of resources. For example, the cost of provision is based on the full value of all resources used or consumed in providing a particular products or service, average over the estimated total units of output.[445]

Commenting on the DNR Pricing Policy in 1999, Mawn and Stanton pointed out that pricing is only one component of an effective information access strategy; other important elements being quality, accuracy and currency, ease of access and use of data.[446]

"Government Information and Open Content Licensing: An Access and Use Strategy", Government Information Licensing Framework Project Stage 2 Report, Queensland Spatial Information Office, Office of Economic and Statistical Research (OESR), Queensland Treasury (2006)

The Government Information Licensing Framework (GILF) project grew out of a project initiated in 2004 by the Queensland Spatial Information Council (QSIC)[447] to address problems arising from the prevailing legal arrangements and practices for data access and sharing, both within government and between government and the private sector. The objective of the GILF project was to recommend licensing models, guides and tools that could be applied in practice to enable PSI to be made available for access and reuse by public and private sector parties.

Stage 1 of the project resulted in endorsement by QSIC and the Information Queensland Steering Committee of an open content licensing model, based on Creative Commons. Stage 2 of the project sought to update QSIC licensing practices and to produce a draft GILF based on an open content licensing model to support data and information transactions between the Queensland Government, other government jurisdictions and the private sector.[448] Since 2007, GILF has continued under the umbrella of the Cooperative Research Centre for Spatial Information (CRC-SI), as a collaboration between QUT's Law Faculty and Queensland Government's Office of Economic and Statistical Research and the Department of Natural Resources and Water.

This report, published in October 2006, describes the work undertaken during Stage 2 of the GILF project and sets out its findings and recommendations.[449] The Stage 2 research confirmed the Stage

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[445] Ibid, pp 130-131.

[446] M Mawn, and G Stanton, *Information Pricing: Should We Give It Away?*, Presented at AURISA 99 - The 27th Annual Conference of AURISA, 22-26 November 1999.

[447] Government Information Licensing Framework (GILF) Project website, http://www.oesr.qld.gov.au/about-our-services/policy/gilf-project.shtml; see also the Queensland Spatial Information Office (QSIC) website for further background information about GILF, http://www.qsic.qld.gov.au/QSIC/QSIC.nsf/CPByUNID/6C31063F945CD93B4A257096000CBA1A accessed on 24 July 2008.

[448] Ibid, p 1.

[449] Queensland Spatial Information Office, Office of Economic and Statistical Research, Queensland Treasury (October 2006) *Government Information and Open Content Licensing: An Access and Use Strategy*, Government Information Licensing Framework Project Stage 2 Report, available at http://www.qsic.qld.gov.au/QSIC/QSIC.nsf/0/F82522D9F23F6F1C4A2572EA007D57A6/$FILE/Stage%202%20Final

1 findings that the regime regulating the collection and release of government information had developed in an ad hoc manner, resulting in a fragmented, inefficient and confusing system of contractual and statutory regulation of information access and reuse.[450]

Stage 2 of the GILF project indicated that open content licensing (and specifically, the Creative Commons (CC) licensing regime) would:

> be of value to Queensland Government agencies, Queensland businesses and community members by enabling increased access to and re-use of public sector information (including spatial or mapping information), and will facilitate economic activity and better informed decision making generally, and foster the development of the information industry in Queensland.[451]

The Stage 2 report's recommendations support the introduction of a simplified system of open content licensing for the majority of the publicly available information provided by the Queensland Government:

2.1 That the Queensland Government establish a policy position that, while ensuring that confidential, security classified and private information collected and held by government continues to be appropriately protected, enables greater use and re use of other publicly available government data and facilitates data sharing arrangements.

2.2 That the Creative Commons open content licensing model be adopted by the Queensland Government to enable greater use of publicly available government data and to support data sharing arrangements.

2.3 That QSIC and the Office of Economic and Statistical Research continue to work closely with the Department of Justice and Attorney-General to ensure that any privacy provisions developed also support new data use, re-use and sharing policies.

2.4 That the Whole-of-Government Information Licensing Project Stage 3: Draft Project Plan for the next phase of this project be endorsed.

2.5 That the Draft Government Information Licensing Framework toolkit, which incorporates the six iCommons (Creative Commons Australia) licences, be endorsed for use in pilot projects proposed for Stage 3, which involves Information Queensland, the Department of Natural Resources and Water, the Environmental Protection Agency, the Department of Primary Industries and Fisheries, the Office of Economic and Statistical Research of Queensland Treasury and the Queensland Spatial Information Council, enabling testing of the CC licences for multi-agency and whole of-Government arrangements.

2.6 That an application be made through the ICT Innovation Fund and Microsoft Program Committee in the Department of Public Works for further funding, to enable the technical development of a Government Information Licensing Management System, consistent with the Draft Government Information Licensing Framework toolkit.

2.7 That a limited number of standard templates be developed to support information licensing transactions relating to confidential or private information or information with commercial value and for which the CC model is not appropriate.[452]

%20Report%20-%20PDF%20Format.pdf?openelement.
[450] Ibid, p 36.
[451] Ibid, p 11.
[452] Ibid, pp 1-2.

"Policy on Access and Pricing for Products, Publications and Services", Department of Natural Resources and Water (2007)

The Department of Natural Resources and Water (DNRW) is the most significant custodian of spatial information in the Queensland Government and manages one of the largest collections of datasets in the State. The Policy on Access and Pricing issued by DNRW on 11 April 2007 (effective July 2007) establishes a departmental access and pricing framework which aims to ensure that all sectors of the community have easy, informed, cost effective and equitable access to the department's products, publications and services.[453]

The policy addresses the following issues:

Market position:

• Encouraging cost effective delivery of Products, Publications and Services (e.g. use of external parties as alternative suppliers);
• Encouraging widespread customer use and value-adding of information.

Access:

• Ensuring that the department meets the Government's priorities in providing a variety of channels to access Products, Publications and Services;
• Facilitating approaches which ensure government, industry and community can discover and access relevant information to support their natural resource business outcomes;
• Streamlining and encouraging information sharing arrangements with all levels of Government and other key stakeholders.

Copyright and liability:

• Safeguarding the intellectual property interests of the department.

Licence agreements:

• Facilitating easily understood permissions and conditions of use.

Pricing:

• Ensuring costs are transparent and consistent;
• Ensuring that costing/pricing by the department complies with competitive neutrality principles (when providing potentially competing Products, Publications and Services).[454]

In part, the policy is designed to assist DNRW in meeting its obligations under Queensland Government's Information Standard 33 (IS33).[455] However, whereas it is implicit in IS33 that publicly accessible government information should be disseminated at low or no cost,[456] the DNRW policy expressly permits "cost recovery" – that is, charging the users of information for the access

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[453] Queensland Department of Natural Resources and Water (April 2007) *Access and Pricing for Products, Publications and Services*, Version 3, p 2, available at http://www.nrw.qld.gov.au/about/policy/documents/3036/imp_2003_1389.pdf.
[454] Ibid.
[455] Ibid, p 2.
[456] Queensland Government, *Information Standard No 33 Information Access and Pricing* (2001), p 5, available at http://www.qgcio.qld.gov.au/SiteCollectionDocuments/Architecture%20and%20Standards/Information%20Standards/Current/is33.pdf accessed on 29 May 2009.

to that information.[457]

The DNRW policy envisages an ad-hoc system of determining access and use constraints and describes three different classes of licence agreements that will be used to disseminate information to the public.[458]

"Australian National Summit on Open Access to Public Sector Information: Conference Report", Queensland Spatial Information Council (QSIC) (2007)

The *Australian National Summit on Open Access to Public Sector Information* ("the National Summit") was held at the Queensland Parliament House in Brisbane, Queensland on 13 July 2007. The Conference Report, published by the Queensland Spatial Information Council (QSIC),[459] summarises the presentations at the National Summit and the recommendations of the participants.

The aim of the National Summit is explained in the Introduction by Tim Barker, Assistant Government Statistician, Office of Economic and Statistical Research (OESR), Queensland Treasury and Professor Brian Fitzgerald, Professor of Intellectual Property and Innovation, Faculty of Law, Queensland University of Technology (QUT), as being:

> not only to facilitate a high level of discussion around the critical issue of access and reuse of [Public Sector Information (PSI)] but to also come away from this meeting with a tangible outcome for the future. To this end, much of the afternoon was spent workshopping ideas. Interestingly, a broad consensus emerged in favour of the following principles:
>
> – the benefits to be derived from the adoption and implementation by governments of an open access policy subject to proper protection of private and other restricted information
> – the benefits of Creative Commons (CC) open content licences for the majority of PSI which is unaffected by privacy or other restricting factors
> – open access to PSI leads to the realisation of the information's full social, cultural, environmental, civil society, and commercial potential.[460]

Dr Terry Cutler's presentation addressed the importance of open access to PSI:[461]

> [I]nnovation is critical to the competitiveness and sustainability of our economy and society and … open access to PSI is important for innovation because knowledge and information flows underpin creativity and innovation.
>
> It is especially important in a small economy like Australia because of the relative scope and scale of public sector information. The public sector is a major – even the dominant – producer and custodian of information. Furthermore, only government and the public sector have the critical mass to create inclusive public platforms and scalable repositories.[462]

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[457] Queensland Department of Natural Resources and Water, *Access and Pricing for Products, Publications and Services* (2007), p 3, available at http://www.nrw.qld.gov.au/about/policy/documents/3036/imp_2003_1389.pdf.
[458] Ibid, p 5.
[459] Queensland Spatial Information Council (QSIC), Queensland Government (2007) *Conference Report: Australian National Summit on Open Access to Public Sector Information,* Brisbane, Queensland, 13 July 2007, available at http://www.qsic.qld.gov.au/QSIC/QSIC.nsf/0/D6C8E0616BC7FB414A2573B7000C42E5/$FILE/Conference%20Report%20-%20National%20Summit%20Open%20Access.pdf?openelement.
[460] Ibid, p 4.
[461] Dr Cutler's paper comprises a separate entry in this literature review.
[462] Ibid, p 19.

Dr Anne Fitzgerald's presentation elaborated on the application of open content licences to public sector materials:

> Based on [a] broader conceptualisation of "public domain", much of the effort that is currently being directed at improving access to public sector information is not driven by an assumption that promoting access is best achieved by removing such materials from copyright protection. To the contrary, there is a growing awareness that the key to facilitating access to public sector materials revolves not so much around the issues of subsistence and ownership of copyright, but depends rather on the licensing and pricing arrangements for access to and reuse of the material.[463]

Additionally, the recorded observations from the National Summit workshops highlighted the importance of open content licences in reducing the risk of legal liability to government for PSI:

> If governments choose to embrace open access to government information this outcome would be facilitated by reducing the risk of legal liability for government, and its public servants, to an acceptable and realistic level through the use of appropriate open content licences, including Creative Commons.

> PSI is far more likely to flow or be made more accessible if the risk of legal liability to government, and its employees, is reduced to acceptable and realistic levels. This concept has been expressed in shorthand form as "get rid of the risk and the data will flow".[464]

The Conference Report sets out a number of "Recommended Actions" that were proposed at the First National Summit:

- Develop a plan of action to be presented to the next meeting of the Online and Communications Ministerial Council (OCMC) in September 2008 supporting a comprehensive national strategy promoting open access to public sector information;
- Continue progress of demonstration projects which enhance access to PSI by providing necessary encouragement and support;
- Demonstrate to the public the real benefits of open access in practice by establishing and promoting a website or portal through which a limited number of selected databases are available for downloading using open access practices and Creative Commons and seeking feedback;
- The operation efficiencies and effectiveness which are able to be realized through employing open access principles and open content licensing to facilitate cross-border data sharing arrangements should be used to illustrate the benefits of open access to public sector information;
- Prepare proper documentation of the open access framework (policy, technology and legal facets); and
- Provide metadata tools to enable custodian agencies and the general public to easily create and apply metadata to their information or data products.[465]

Arguably one of the most important outcomes of the First National Summit was the Stanley Declaration, which is set out at the conclusion of the Conference Report:[466]

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[463] Ibid, p 11.
[464] Ibid, pp 20-21.
[465] Ibid, pp 21-23.
[466] Ibid, p 24.

5 The Stanley Declaration

A broad consensus emerged in favour of the benefits to be derived from government implementing an open access policy, subject to proper protection of private and other restricted information, and the use of Creative Commons (CC) open content licences for the majority of PSI which is unaffected by privacy or other restricting factors.

Conceptually, open access to PSI leads to the realisation of the information's full social, cultural, environmental, civil society, and commercial potential.

The group believed that a declaration was required to reflect their collective view.
Given that the Summit was convened in Brisbane within the boundaries of the former
County of Stanley, the group formulated the following declaration.

The Stanley Declaration

The adoption and implementation by governments of an open access policy to public sector information (PSI) will ensure the greatest public benefit is derived from the increased use of information created, collected, maintained, used, shared, and disseminated by and for all governments in Australia.

Two further Summits on open access to PSI were convened in Queensland in 2008:

- The *International Summit on Access to Public Sector Information* in Brisbane, Queensland on 4 March 2008 ("the Brisbane Summit");[467] and

- The *Open Access to Public Sector Information Seminar* in Canberra, Australian Capital Territory on 6 March 2008 ("the Canberra Summit").[468]

The Brisbane Summit was organised by the Queensland Spatial Infrastructure Council (QSIC) and included the following presentations:

- "Open Access to PSI" by Professor Brian Fitzgerald, Queensland University of Technology (QUT) Law Faculty;

- "European Perspectives on PSI Re-use" by Chris Corbin, ePSIplus Analyst, United Kingdom (UK)

- "New Zealand Policy on Information Access" by Keitha Booth, Senior Advisor, E-government Strategy and Policy, Information and Communication Technologies Branch, New Zealand;

- "Shaping Australia's future through innovation…a call for your participation" by Dr Terry Cutler, Review of the National Innovation System, Australia;

- "Productivity and Open Access to Public Sector Information" by Dr Peter Crossman, Government Statistician & Assistant Under-Treasurer, Queensland Treasury;

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[467] See http://www.epsiplus.net/reports/australia_summits_march_2008/brisbane_summit accessed on 29 May 2009.
[468] See http://www.epsiplus.net/reports/australia_summits_march_2008/canberra_summit accessed on 29 May 2009.

- "The Government Information Licensing Framework" by Tim Barker and Neale Hooper, Queensland Treasury; and

- "Australian Government: Geospatial Data - Pricing & Access Empowering Australia with Spatial Information" by Ben Searle, General Manager, Australian Government Office of Spatial Data Management.[469]

The Canberra Summit was hosted by the Office of Spatial Data Management (OSDM) in collaboration with the Cooperative Research Centre for Spatial Information (CRC-SI), the Queensland Government and Queensland University of Technology (QUT). The Canberra Summit largely covered the same areas as the Brisbane Summit.[470]

"Brisbane Declaration", Open Access and Research Conference, Queensland University of Technology (QUT) and OAK Law Project (2008)

From 24 - 25 September 2008, the Queensland University of Technology (QUT) Faculty of Law and the Open Access to Knowledge (OAK) Law Project ran the Open Access and Research Conference at the Stamford Hotel, Brisbane.

Following the conference, the following statement was developed and has the endorsement of over sixty participants:

Brisbane Declaration

Preamble
The participants recognise Open Access as a strategic enabling activity, on which research and inquiry will rely at international, national, university, group and individual levels.

Strategies
Therefore the participants resolve the following as a summary of the basic strategies that Australia must adopt:

1. Every citizen should have free open access to publicly funded research, data and knowledge.
2. Every Australian university should have access to a digital repository to store its research outputs for this purpose.
3. As a minimum, this repository should contain all materials reported in the Higher Education Research Data Collection (HERDC).
4. The deposit of materials should take place as soon as possible, and in the case of published research articles should be of the author's final draft at the time of acceptance so as to maximize open access to the

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[469] See http://www.epsiplus.net/reports/australia_summits_march_2008/brisbane_summit accessed on 29 May 2009.
[470] "The WEB 2.0 Landscape: Access as a Driver of Innovation" by Professor Brian Fitzgerald, Queensland University of Technology; "European Perspectives of PSI Reuse" by Chris Corbin, Analyst ePSIplus, UK; "United Kingdom Agenda for PSI" by Carol Tullo, Director, Office of Public Sector Information, UK; "New Zealand Policy on Information Access" by Keitha Booth, Senior Advisor, State Services Commission, New Zealand; "What do we know about what is known in Australia? Sharing information through the National Statistical Service" by Susan Linacre, Deputy Australian Statistician, Australian Bureau of Statistics; "Australian Government: Geospatial Data -Pricing & Access" by Ben Searle, General Manager, Office of Spatial Data Management; "The Government Information Licensing (GILF) Project" by Neale Hooper, Principal Lawyer, Office of Economic Research, Queensland; and "Queensland Government Information Licensing Framework and Business Case" by Dr John Cook, Senior Statistician, Office of Economic and Statistical Research, Queensland. See http://www.epsiplus.net/reports/australis_summits_march_2008/canberra_summit at 28 August 2008.

material.

Brisbane, September, 2008[471]

"Queensland Public Sector Intellectual Property Guidelines" (Version 2), Queensland Government (2007)

The *Queensland Public Sector Intellectual Property Guidelines* (IP Guidelines),[472] version 2.0 of which were released in January 2007, provide guidance to agencies on management and commercialisation of intellectual property generally. The IP Guidelines also address issues relevant to the use and licensing of public sector intellectual property.

"The Right to Information: Reviewing Queensland's Freedom of Information Act", report by the FOI Independent Review Panel, Chair: Dr David Solomon AM, Members: Ms Simone Webbe and Mr Dominic McGann (2008)

In September 2007, the Queensland Government appointed the Freedom of Information (FOI) Independent Review Panel to inquire into the *Freedom of Information Act 1992* and identify ways to improve and modernise the Act.[473] The Panel's discussion paper was published on 30 January 2008.[474] The *Right to Information* report expands on the discussion paper and incorporates ideas that emerged in responses addressing the questions in the discussion paper, other submissions from the public, observations of the Panel members at the "International Summit on Open Access to Public Sector Information" conference held in Brisbane on 4 March 2008, and in proposals advanced at the public seminar the Panel held jointly with the Australian Law Reform Commission (ALRC) in Brisbane on 6 March 2008.[475] Additionally, the report considers the ALRC's discussion paper on privacy and takes account of the Queensland Government's decision to establish a new Civil and Administrative Tribunal.[476]

The Terms of Reference for the review included:

> 4. Rapid advances in information and communication technologies have led to the creation of millions of government documents each year. The culture within government is now generally more open, with considerable Government information publicly accessible on the internet. Nevertheless, there is still scope to improve access to government documents and reduce the time and costs involved in accessing government documents.[477]

On 11 October 2007, Premier Anna Bligh addressed the Queensland Parliament about the review

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[471] See http://www.earlham.edu/~peters/fos/2008/10/brisbane-declaration-on-oa.html accessed 29 May 2009.

[472] Queensland Government (January 2007) *Queensland Public Sector Intellectual Property Guidelines,* Version 2, available at http://www.dtrdi.qld.gov.au/dsdweb/v3/documents/objdirctrled/nonsecure/pdf/5071.pdf.

[473] FOI Independent Review Panel (Chair: Dr David Solomon AM; Members: Ms Simone Webbe and Mr Dominic McGann) (June 2008) *The Right to Information: Reviewing Queensland's Freedom of Information Act,* The State of Queensland (Department of Justice and Attorney-General), p 8, available at http://www.foireview.qld.gov.au/ accessed on 21 October 2008.

[474] Ibid.

[475] Ibid, pp 8, 11.

[476] Ibid, p 8.

[477] Ibid.

and members of the Panel:

> I believe there are opportunities to provide the public with greater access to information and to promote greater transparency to use modern technology and smarter operating systems. The panel that I have appointed to review the FOI legislation is being chaired by Dr David Solomon AM. David Solomon is a barrister, an author, a journalist and a respected commentator on Australian government, politics and constitutional law. Dr Solomon was also chair of the Electoral and Administrative Review Commission in 1992 and 1993. Dr Solomon is joined on the panel by Ms Simone Webbe, a former Deputy Director-General of the Department of the Premier and Cabinet, and Mr Dominic McGann, a partner with law firm McCullough Robertson. The terms of reference for the review are wide, and I table these terms of reference for the benefit of the House. The panel will prepare an information paper for release in January 2008, which will form the basis for public consultation. A final report for Cabinet consideration will then follow with any necessary legislation to be brought before the House next year. By establishing this independent review panel to comprehensively review our freedom of information laws, my government is demonstrating its ongoing commitment to open and accountable government.[478]

The Executive Summary to the *Right to Information* report states:

> **FOI needs political support and an enabling broader information policy context**
>
> The Panel argues for a whole of government strategic information policy and governance arrangements addressing the lifecycle of government information and interconnecting strategically with other relevant public policies. FOI's place in the government information experience should be recast as the Act of last resort moving the existing "pull" model to a "push" model where government routinely and proactively releases government information without the need to make an FOI request.[479]

The report sets out a large number of recommendations for reform of FOI legislation and governance, including:

> **Recommendation 1** (p. 34)
>
> As a priority, the Queensland Government should develop a whole of government strategic information policy that posits government information as a core strategic asset in the Smart State vision, addressing the lifecycle of government information and interconnecting strategically with other relevant public policies. Freedom of information, privacy, public records, ICT governance and systems would constitute some of the elements of this overarching information policy, and would benefit from policy consistencies and cross-leveraging results.

> **Recommendation 2** (p. 34)
>
> Pending completion of the whole of government strategic information policy (Rec. 1), the Queensland Government should in the interim recast FOI's place in the government information experience as the Act of last resort moving the existing "pull" model to a "push" model where government routinely and proactively releases government information without the need to make an FOI request.

> **Recommendation 3** (p. 34)
>
> The following elements should form part of the more highly evolved "push" model in Queensland and should be

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[478] Bligh, A.M., Ministerial Statement, Queensland Parliamentary Debates, 11 October 2007, p 3434, quoted in FOI Independent Review Panel (Chair: Dr David Solomon AM; Members: Ms Simone Webbe and Mr Dominic McGann) (June 2008) *The Right to Information: Reviewing Queensland's Freedom of Information Act,* The State of Queensland (Department of Justice and Attorney-General), pp 10-11, available at http://www.foireview.qld.gov.au/ accessed on 21 October 2008.

[479] FOI Independent Review Panel (Chair: Dr David Solomon AM; Members: Ms Simone Webbe and Mr Dominic McGann) (June 2008) *The Right to Information: Reviewing Queensland's Freedom of Information Act,* The State of Queensland (Department of Justice and Attorney-General), p 4, available at http://www.foireview.qld.gov.au/ accessed on 21 October 2008.

provided for in the freedom of information legislation, and supported by guidelines, sufficient legal protections, and the active monitoring efforts and collaborative approach of the Information Commissioner in a revamped role (more in chapter 20):

• publication schemes and proactive decision-making processes that routinely release as much information as practicable (including documents themselves or public editions thereof) at large, or to specific interest sectors, as enabled by a range of ever-improving ICT features;
• disclosure logs that provide online access to information already released under freedom of information (subject to lawful exceptions) no sooner than 24 hours after release to the requester (with supplementary contextual information providing greater balance or depth to the issue(s) that the Government considers necessary);

• greater administrative release through the exercise of executive discretion in good faith and in the appropriate circumstances (with sufficient legal protection) rather than the current tendency to refer all requests for documents to be managed through the longer and more expensive FOI processing model; and

• administrative access schemes for appropriate information sets only.

Specifically, the freedom of information legislation would impose a mandatory obligation for agencies and public authorities to develop and implement a publication scheme taking into account the public interest in access to the information it holds.

The publication schemes must be approved by the Information Commissioner in a similar model to that operating in the United Kingdom which recognises flexibility and capacity building imperatives in the system and includes development of model publication schemes by the Information Commissioner for different classes of public body such as for local government, the health sector and education.

Published information should be made available electronically wherever possible.

…

Recommendation 8 (p. 36)

The governance arrangements supporting a new strategic information policy framework should include the Information Commissioner collaborating with the Chief Information Officer and the Queensland State Archivist overseen by the relevant CEO steering committee.

Recommendation 9 (p. 36)

The Information Commissioner, in collaboration with the Chief Information Officer and the Queensland State Archivist, should consider whether the UK's "Click-Use" licence initiative with the developments on the GILF and IS 33 and advise on Crown copyright reuse.

Recommendation 10 (p. 37)

The Information Commissioner should take a leadership role in the change management involved in implementing a new information policy adopting a "push" model. The Information Commissioner should also guide consistency in implementation, and be alert and responsive to the support needs of smaller public authorities and local government.

Recommendation 11 (p. 47)

Access and amendment rights for personal information should be moved from freedom of information to a privacy regime, preferably to a separate Privacy Act.[480]

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[480] FOI Independent Review Panel (Chair: Dr David Solomon AM; Members: Ms Simone Webbe and Mr Dominic McGann) (June 2008) *The Right to Information: Reviewing Queensland's Freedom of Information Act,* The State of Queensland (Department of Justice and Attorney-General), Appendix 1: Report recommendations, pp 334-336, available at http://www.foireview.qld.gov.au/ accessed on 21 October 2008.

Right to Information Act 2009 (Queensland)

The Queensland government enacted the *Right to Information Act* 2009[481] as a key part of its response to the numerous recommendations on reforming administrative arrangements for accessing PSI contained in *The Right to Information: Reviewing Queensland's Freedom of Information Act*", report by the FOI Independent Review Panel.[482] The Act establishes the position of Information Commissioner as an integral part of the right to information reforms. The Queensland government has also published a *Statement of Right to Information Principles for the Queensland Public Service.*[483]

Information Privacy Act 2009 (Queensland)

The *Information Privacy Act* 2009[484] was also enacted by the Queensland Government as part of its response to *The Right to Information: Reviewing Queensland's Freedom of Information Act*" report by the FOI Independent Review Panel.[485] Recommendation 11 in the report supported shifting access and amendment rights for personal information from freedom of information to a separate Act.[486]

Victoria

A Strategy Framework to Facilitate Spatially Enabled Victoria, E Thomas, O Hedberg, B Thompson, A Rajabifard, Victorian Spatial Council (2009)

This paper[487] presented at the GSDI 11 World Conference held in Rotterdam from 15 – 19 June 2009,[488] discusses the central role of the Victorian Spatial Information Strategy 2008-2010 (VSIS) in facilitating the spatial enablement vision in Victoria. In particular, the VSIS highlights a range of activities and processes to be undertaken across all disciplines and sectors to facilitate framework development.

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[481] See http://www.rti.qld.gov.au/rti/the_information_commissioner.asp. Regulations made under the Act came into force on 1 July 2009. Queensland is the first state to enact such legislation.

[482] See http://www.foireview.qld.gov.au/.

[483] See http://www.rti.qld.gov.au/downloads/Right%20to%20Information%20Principles.pdf.

[484] See http://www.oic.qld.gov.au/legislation. Regulations made under the Act came into force on 1 July 2009.

[485] See http://www.foireview.qld.gov.au/. In this way privacy issues are being separated from the right to access PSI issues.

[486] See Appendix 1: Report recommendations, pp 334-336, available at http://www.foireview.qld.gov.au/ accessed on 21 October 2008.

[487] Elizabeth Thomas, Ollie Hedberg, Bruce Thompson, Abbas Rajabifard, Victorian Spatial Council and Centre for Spatial Data Infrastructures and Land Administration, Department of Geomatics, University of Melbourne, *A Strategy Framework to Facilitate Spatially Enabled Victoria*, available at http://www.csdila.unimelb.edu.au/publication/conferences/GSDI-11/AStrategyFrameworktoFacilitateSpatiallyEnabledVIC.pdf accessed on 17 July 2009.

[488] See http://www.gsdi.org/gsdi11/ accessed 17 July 2009.

It commences by emphasising the importance of developing a "Spatial Data Infrastructure" (SDI):

- Society is changing rapidly and is facing many challenges, such as environmental pressures, economic crises, ensuring equitable provision of services. By linking solutions to location, spatial information can be a 'unifying medium' between the multi-disciplinary approaches needed to address these challenges.

- Providers of spatial information are facing increasing demands from technological developments that are providing the capacity to deliver greater volumes of data to users. As a result, we can expect the demand for immediately available and accurate spatial information to continue to increase.
  …

- Big corporations are having a significant impact on the shape of the spatial community, and their ability to put products on the market quickly is starting to drive the standards for collection and dissemination of spatial information.[489]

According to this paper, "VSIS provides a blueprint by setting out the requirements for the framework and engagement that will enable spatial information realise its potential".[490]

> Victoria has tried to take a practical approach to first defining then developing its SDI, based on the starting point that to realise the benefits of spatial information it must be accessible and able to be used:
>
> > "The key to achieving the benefits that spatial information provides is the availability of and access to it. Such information must not only exist, it must be easy to identify who has it, whether it is fit for the purpose at hand, how it can be accessed and whether it can be integrated with other information" (Victorian Spatial Council, 2005).
>
> A Spatial Data Infrastructure therefore facilitates discovery, access and use of spatial data for decision making:
>
> > "The SDI is an enabler – in simple terms, a mechanism for making data available and for sharing and exchanging it to enhance the achievement of social, environmental and economic goals. …Behind SDIs are the myriad of activities that create the conditions in which that sharing and exchange can take place, ie the development of the data, technology, policies, institutional arrangements and capacity building (ie equipping people to use the technology and information)" (Victorian Spatial Council, 2005).[491]

The paper concludes that:

> The key element in giving effect to Victoria's framework for spatially enabling Victoria is the participation of all sectors of the spatial information community.[492]
> ……
>
> The development of a spatially enabled Victoria will be underpinned by the shape of its SDI. And the SDI must continually evolve if it is to remain relevant to the needs of users, able to contribute to meeting the environmental, social and economic challenges facing society, and open to the potential offered by new technology. It will be by drawing on the expertise of the whole spatial information community, and from the wider community more generally, that we will be able to ensure that this evolution will continue to meet the goal of facilitating access to and use of spatial information.
>
> To harness those efforts, a comprehensive integrating framework is needed. In Victoria, such a framework has most recently been articulated by the Victorian Spatial Information Strategy 2008-2010. It has four defining features: creating frameworks for facilitating use of spatial information and for spatial information

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[489] Para 1, Introduction.
[490] Ibid.
[491] Para 2.1, Defining Victoria's SDI.
[492] Para 4, Implementing the Framework for Spatial Enabling Victoria.

management (frameworks within a framework), encouraging the use of the new participatory approaches offered by technology to deliver the quality of information users are demanding, and adopting collaboration and partnerships as the basis for supporting the growth of the whole spatial community.

It is now the challenge for the Victorian Spatial Council to shepherd the evolution of Victoria's SDI toward that goal.[493]

"Outline for a Policy on Data Sharing Frameworks", Victorian Spatial Council, Department of Sustainability and Environment, Victoria (2005)

The Victorian Spatial Council (VSC) published its "Outline for a Policy on Data Sharing Frameworks" on 1 June 2005.[494] The document notes that whilst each separate data sharing framework (whether it relates to spatial data or not) has its own unique features, there are nevertheless some common characteristics shared by data frameworks.[495]

The VSC identifies various benefits achievable through data sharing frameworks and formulates a set of policy principles designed to promote best practice, reduce costs and maximise the benefits of the frameworks. The principles proposed to govern the efficient and effective operation of data sharing frameworks are as follows: [496]

- Data sharing frameworks are a preferred method of making data available and accessing it.
- The VSC will encourage the establishment of data sharing frameworks, or participation in already existing ones.
- Data sharing frameworks should encompass all aspects of the creation and management of data and its provision to users, such as data design, capture, processing and publication; integration capability; discovery/search; acquisition; and use.
- Good spatial practices should be adopted in the operation of data sharing frameworks. These encompass governance, standards and protocols, custodianship, data management, etc. The Victorian Spatial Information Strategy should form the starting point for these good spatial practices.
- A data-sharing framework should be networked (using open source software).
- A data-sharing framework should be able to interoperate with other networks/frameworks.

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[493] Para 5, Conclusion.
[494] Victorian Spatial Council, Department of Sustainability and Environment, *Outline for a Policy on Data Sharing Frameworks*, 1 June 2005, http://www.land.vic.gov.au/CA256F310024B628/0/01C0F34838872DC1CA2572650007531E/$File/Policy+position+on+data+sharing+frameworks+June+2005.pdf. Accessed 11 June 2009. Members of the VSC come from various sectors within the spatial information community, including Government (State, local and Federal), the research sector, the private sector, and academia.
[495] Ibid, p 2. These characteristics include
- distributed custodianship
- standard protocols
- interoperability
- data access arrangements
- governance arrangements (such as data exchange agreements, governing and administrative bodies, responsibilities of custodians and service providers, and access rules).
[496] Ibid, p 3.

Open access policies, practices and licensing

- Custodians who participate in a data-sharing framework will retain control over their datasets, including data capture, management and access.
- Custodians who participate in a data-sharing framework should maximise the amount of data they make available to it.
- For data to be included in the data-sharing framework, it must be accompanied by appropriate metadata (which in turn conforms to national and international standards).

In addition to advocating the establishment of data sharing frameworks, the VSC's role extends to the development and dissemination of good spatial data practices guidelines for these frameworks.[497]

"Victorian Spatial Information Strategy 2008-2010", Victorian Spatial Council, Department of Sustainability and Environment, Victoria (2008)

In April 2008, the Victorian Spatial Council published a strategy document, *Victorian Spatial Information Strategy 2008-2010.*[498] The Chairman's foreword explains:

> This Strategy charts some of the changes occurring in spatial information and technology, and sets out the key challenges they pose.[499]

The Strategy identifies four strategic directions relevant to addressing the challenges confronting the Victorian spatial information industry in the period 2008 to 2010:

1. Creating a framework in which the use of spatial information can flourish
2. Adopting an inclusive approach to the management of spatial information
3. Developing the spatial information community through collaboration and partnerships
4. Maintaining the foundations for Spatial Information Management.[500]

It is the first of these directions which focuses on the accessibility and use of spatial information. The Strategy intentionally does not set specific targets as the Council expects the different sectors to develop responses appropriate to meet their particular needs.[501]

"Inquiry into Improving Access to Victorian Public Sector Information and Data", Economic Development and Infrastructure Committee, Victorian Parliament (2008)

The Economic Development and Infrastructure Committee (EDIC) is a Joint Investigatory Committee of the Parliament of Victoria. On 27 February 2008, the EDIC was asked to inquire into, consider and report to Parliament on issues surrounding the application of open content and

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[497] Ibid, p 3.

[498] Victorian Spatial Council, *Victorian Spatial Information Strategy 2008-2010* (April 2008) http://www.land.vic.gov.au/Land/lcnlc2.nsf/childdocs/-340555D9FDFF5665CA257035001D2A89-5B9FC8A581142938CA257035001D483A-FF1AAAE6B37D27B4CA2571E0001858A1-492DA4E74309B2A6CA257450000ACBF4?open accessed on 11 June 2009.

[499] Ibid, p iv.

[500] Ibid, p 20.

[501] Ibid, p 1.

open source licensing to improve access to Victorian Government information and data.[502] It was to report to Parliament by 30 June 2009.

The Committee's Terms of Reference were:

INQUIRY INTO IMPROVING ACCESS TO VICTORIAN PUBLIC SECTOR INFORMATION AND DATA

That the Economic Development and Infrastructure Committee inquire into, consider and report to Parliament on the potential application of open content[503] and open source[504] licensing to Victorian Government information and, in particular, the Committee is asked to:

a) report on the potential economic benefits and costs to Victoria of maximising access to and use of Government information for commercial and/or non-commercial purposes, including consideration of:

  i. public policy developments elsewhere in Australia and internationally; and

  ii. the types of information that will provide the greatest potential benefit;

b) consider whether use of open source and open content licensing models, including Creative Commons, would enhance the discovery, access and use of Government information;

c) report on the use of information and communication technology to support discovery, access and use of Government information; and

d) identify likely risks, impediments and restrictions to open source and open content licensing of Government information, including impacts on and implications for any existing cost recovery arrangements.[505]

The EDIC announced a call for submissions and from 12 August 2008, held public hearings.[506] In July 2008, the EDIC released the Discussion Paper, *Inquiry into Improving Access to Victorian Public Sector Information and Data.*[507] The Discussion Paper considers five key areas of interest arising from the Terms of Reference:

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[502] Economic Development and Infrastructure Committee (EDIC) (2008) *Inquiry into Improving Access to Victorian Public Sector Information and Data,* Discussion Paper, July 2008, p 1, http://www.parliament.vic.gov.au/edic/inquiries/access_to_PSI/EDIC_PSI_Discussion_Paper.pdf.   The call for submissions is available at http://www.parliament.vic.gov.au/edic/inquiries/access_to_PSI/call_for_submissions.html; submissions received are available at http://www.parliament.vic.gov.au/edic/inquiries/access_to_PSI/submissions.html; see also http://www.parliament.vic.gov.au/edic/inquiries/access_to_PSI/default.htm.

[503] Open content licensing can improve the public availability of copyright material, by use of licences that grant permission to access, re-use and redistribute material with few or no restrictions, provided that the original author is attributed. It aims to make copyright material more active by minimising the formal processes required to permit the re-use of material.

[504] An open source licence is a copyright licence for computer software that makes the source code available to other programmers to modify and redistribute, provided that the original author is attributed.

[505] Economic Development and Infrastructure Committee Terms of Reference, received on 27 February 2008, http://www.parliament.vic.gov.au/edic/inquiries/access_to_PSI/EDIC_PSI_Terms_of_Reference.pdf accessed on 11 June 2009.

[506] See http://www.parliament.vic.gov.au/edic/inquiries/access_to_PSI/public_hearings.html accessed on 3 September 2008.

[507] Economic Development and Infrastructure Committee (EDIC) (2008) *Inquiry into Improving Access to Victorian Public Sector Information and Data,* Discussion Paper, July 2008 http://www.parliament.vic.gov.au/edic/inquiries/access_to_PSI/EDIC_PSI_Discussion_Paper.pdf.

- the economic and social issues surrounding access to PSI, including access by means of open content licensing;
- how the public sector should be defined, and the types of PSI that should be made available;
- issues surrounding pricing for PSI access;
- issues surrounding open content licensing; and
- issues surrounding open source licensing.[508]

Witnesses at the public hearings held by the EDIC presented a range of views on open access to PSI.[509] For example, the views expressed by Mr A Noble and Ms C Dalton of Google Australia strongly favoured open access. In the course of his evidence in Melbourne on 27 October 2008 Mr Noble stated:

> I think the key point is always to remember here that this is always about openness of information. It is not to preclude people from going to the source data. It is to try and make that information available in as many ways as possible on as many platforms as possible so that the benefits to the public of getting the information out there are fully captured.
>
> …..
>
> in a perfect world, it is about making information available and not being overly concerned as to the format and the absence or presence of metadata. In a perfect world it would be avoiding the temptation to be overly concerned about the form of the data. There is a trade-off between accessibility and making it available versus worrying about getting it into the right format and it being perhaps less accessible as a result of that. Again, our view would be: let's favour accessibility and openness.

In response to the question posed by Mr Crisp of the Committee:

> we [the government] have this data [PSI] in [government agency] silos; how much preparation do we have to do as government bodies in investing money in that to make it available? If I take it you are right, we really only have to have a minimum amount of investment there, providing we take down the barriers for you [Google and others] to look inside?

Mr Noble replied:

> Yes. A challenge for the committee is to not make it overly complicated and not dwell excessively on how we have to basically prepare this data – how we need to put this data into very standard forms. I think that is something the committee should really be very mindful of.

"Inquiry into Improving Access to Victorian Public Sector Information and

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[508] Ibid, p 1.
[509] Note in particular submissions by the Australian Bureau of Statistics at http://www.parliament.vic.gov.au/edic/inquiries/access_to_PSI/submissions/PSI_Sub_63_ABS.pdf, Bureau of Meteorology at http://www.parliament.vic.gov.au/edic/inquiries/access_to_PSI/submissions/PSI_Sub_17_Bureau_Meteorology.pdf, QUT Law Faculty at http://www.parliament.vic.gov.au/edic/inquiries/access_to_PSI/submissions/PSI_Sub_38_QUT_Law_Faculty.pdf, and transcripts of presentations by Professor A Fitzgerald at http://www.parliament.vic.gov.au/edic/inquiries/access_to_PSI/transcripts/EDIC_080812_A_Fitzgerald.pdf, Dr Peter Crossman, Tim Barker and Neale Hooper at http://www.parliament.vic.gov.au/edic/inquiries/access_to_PSI/transcripts/EDIC_080812_QLD_Treasury.pdf, Professor Tom Cochrane and Professor Brian Fitzgerald at http://www.parliament.vic.gov.au/edic/inquiries/access_to_PSI/transcripts/EDIC_080812_Fitzgerald_&_Cochrane.pdf and Dr Terry Cutler at http://www.parliament.vic.gov.au/edic/inquiries/access_to_PSI/transcripts/EDIC_300908_Cutler_&_Co.pdf.

Data", Report of the Economic Development and Infrastructure Committee (2009)

The Report of the Economic Development and Infrastructure Committee (EDIC) on the Inquiry into Improving Access to Victorian Public Sector Information and Data was tabled in the (State) Victorian Parliament on 24 June 2009.[510] The Committee was asked to report on the benefits and costs of maximising access to and use of Government information for commercial and non-commercial purposes.

The Report is very significant, as it is the first in Australia to consider in depth the issue of access to PSI. As such it is likely to provide the template for work by the federal and other state/territory governments. In general terms, the report recommends that the Victorian Government establish a comprehensive Information Management Framework (IMF), with open access to Government information at no or marginal cost as the default position.[511] Specific key recommendations in the report include:[512]

> *Recommendation 1:* That the Victorian Government release a public statement indicating that it endorses open access as the default position for the management of its public sector information.
>
> *Recommendation 2:* That the Victorian Government develop a whole-of-government Information Management Framework (IMF) with the following key features:
>
> - that the object of the IMF is to promote and facilitate increased access to and re-use of Victorian public sector information (PSI) by government, citizens, and businesses;
> - that the default position of the IMF be that all PSI is made available;
> - that the IMF define and describe criteria under which access to PSI may be restricted, or released under licence;
> - that PSI made available under the IMF be priced at no cost or marginal cost; and
> - that the IMF establish a systematic and consistent whole-of- government methodology for categorisation, storage and management of PSI.

The Committee was also asked to consider how flexible licensing systems would facilitate reuse of government information and recommended that the Victorian Government adopt the Creative Commons licensing model for the IMF.[513]

The key economic recommendation in the report was that the Victorian Government establish an IMF, with open access to PSI at no or marginal cost as the default position, with specific guidelines to be developed to deliver this policy outcome.[514] The Committee formed the view that the economic and social benefits arising from the release of Victorian Government information at no cost will far outweigh the benefits of treating it as a commodity.[515]

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[510]Victorian Parliament, Economic Development and Infrastructure Committee, *Inquiry into Improving Access to Victorian Public Sector Information and Data (Final Report)*, June 2009, available at http://www.parliament.vic.gov.au/edic/inquiries/access_to_PSI/final_report.html accessed on 30 June 2009.

[511] The main recommendations are summarised in the Press Release, available at http://www.parliament.vic.gov.au/edic/inquiries/access_to_PSI/PSI_Inquiry_Media_Release.pdf.

[512] *Inquiry into Improving Access to Victorian Public Sector Information and Data (Final Report),* p xxv.

[513] Ibid, P xxvi, Recommendation 14.

[514] Ibid, Recommendation 16.

[515] Ibid, para 2.4, p 19. The Victorian Government has six months to respond to the Committee's recommendations

Chapter 2: New Zealand

By contrast with Australia, New Zealand has developed a comprehensive information policy framework for government held information, which encompasses sector-specific strategies for digital content,[516] geospatial information[517] and e-government services.[518] Work has been ongoing on the development of whole-of-government policies and practices for PSI since the NZ Cabinet approved the *Policy Framework for New Zealand Government-held Information* (Policy Framework) in 1997.[519] In addition, the New Zealand Government has developed various strategies relating to government-held information, including the *Digital Strategy,*[520] the *e-Government Strategy*[521] and the *Geospatial Strategy.*[522]

The Policy Framework, developed by the New Zealand Public Service chief executives and State Services Commission,[523] adopted the position that government-held information should be made as accessible as possible, with barriers to access removed. It balances the ease of access with security and the need to withhold certain types of information (notably personal information). The Policy Framework enunciated 11 principles which provide general guidance on matters including: availability, coverage, pricing, ownership, stewardship, collection, copyright, preservation, quality, integrity and privacy.

The *Digital Strategy*[524] was first released in 2005 with the aim of creating a digital future for all New Zealanders, acknowledging that the information accessed through digital technologies can promote innovation, increase productivity and enrich the quality of the lives of New Zealanders. The strategy established the goal of unlocking the nation's "stock of content and provide all New Zealanders with seamless, easy access to the information that is important to their lives, businesses

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[516] National Library of New Zealand, *Creating a Digital New Zealand: New Zealand's Digital Content Strategy*, August 2007, available at http://www.digitalstrategy.govt.nz/upload/Main%20Sections/Content/NATLIBDigitalContentStrategy.pdf.

[517] Land Information New Zealand in consultation with the State Services Commission and others, *Understanding our Geographic Information Landscape: A New Zealand Geospatial Strategy*, (January 2007) available at www.geospatial.govt.nz/assets/Geospatial-Strategy/nz-geospatial-strategy-2007.pdf.

[518] See generally at http://www.e.govt.nz/about-egovt and New Zealand State Services Commission (2006) *Enabling Transformation: A strategy for e-government 2006*, available at http://www.e.govt.nz/about-egovt/strategy/strategy-nov-06.pdf.

[519] See "Policy framework for New Zealand Government-held information" website at http://www.ssc.govt.nz/display/document.asp?DocID=4880 accessed on 11 June 2009.

[520] National Library in collaboration with government (August 2007) *Creating a Digital New Zealand: New Zealand's Digital Content Strategy,* available at http://www.digitalstrategy.govt.nz/upload/Main%20Sections/Content/NATLIBDigitalContentStrategy.pdf.

[521] Local Government New Zealand and the E-Local Government Strategy Project Team submission, in Land Information New Zealand in consultation with the State Services Commission and others (January 2007) *Understanding our Geographic Information Landscape: A New Zealand Geospatial Strategy,* p 20, available at www.geospatial.govt.nz/assets/Geospatial-Strategy/nz-geospatial-strategy-2007.pdf.

[522] Land Information New Zealand in consultation with the State Services Commission and others (January 2007) *Understanding our Geographic Information Landscape: A New Zealand Geospatial Strategy,* available at www.geospatial.govt.nz/assets/Geospatial-Strategy/nz-geospatial-strategy-2007.pdf.

[523] See "Policy framework for New Zealand Government-held information" website at http://www.ssc.govt.nz/display/document.asp?DocID=4880 accessed on 11 June 2009.

[524] See the Digital Strategy website at http://www.digitalstrategy.govt.nz/.

and cultural identity."[525] It saw the unlocking of repositories of information (whether historical or new) as adding to the nation's wealth of knowledge and creating a major new resource for education, cultural development and innovation. A revised version of the *Digital Strategy*, *Digital Strategy 2.0*, released in 2008, contains strong statements about reuse of public sector information, committing government to making public information accessible to everyone in a way that people want it, when they want it. Government is to provide secure personalised interaction between government and individuals, and open up authoritative data sources also while protecting privacy and the security of information.

The *New Zealand Geospatial Strategy*, launched in 2007, is designed to improve knowledge of, and access to, the geospatial assets owned, maintained or used by government.[526] On 1 July 2009, the Ministry for the Environment (Manatū Mō Te Taiao) announced that it was making two important environmental databases - the Land Cover Database (LCD) and Land Environments New Zealand (LENZ) classification - available online, for free and licensed under an unrestricted Creative Commons licence (CC-BY).[527]

"Policy Framework for New Zealand Government-held Information", New Zealand Public Service chief executives and State Services Commission (1997)

The *Policy Framework for New Zealand Government-held Information* was developed by the New Zealand Public Service chief executives and State Services Commission and was approved by Cabinet in 1997.[528] Practical guidelines for implementation of the Policy Framework have not yet been formulated and it is currently under review.[529]

The Policy Framework adopted the position that government-held information should be made as accessible as possible, with barriers to access removed. It sought to strike a balance between the ease of access with security and the need to withhold certain types of information (notably personal information).

The Policy Framework is based on the following eleven principles:

      1.   Availability

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[525] New Zealand Government (May 2005) Digital Strategy: Creating Our Digital Future, p 11, available at http://www.digitalstrategy.govt.nz/upload/documents/MED11706_Digital%20Strategy.pdf.

[526] Land Information New Zealand in consultation with the State Services Commission and others, Understanding our Geographic Information Landscape: A New Zealand Geospatial Strategy, (January 2007) available at www.geospatial.govt.nz/assets/Geospatial-Strategy/nz-geospatial-strategy-2007.pdf.

[527] See the Ministry for the Environment New Zealand website at http://www.mfe.govt.nz/ and http://www.mfe.govt.nz/issues/land/land-cover-dbase/index.html accessed on 3 July 2009.

[528] See "Policy framework for New Zealand Government-held information" website at http://www.ssc.govt.nz/display/document.asp?DocID=4880 accessed on 11 June 2009.

[529] In August 2009, the New Zealand government released for comment the draft New Zealand Government Open Access and Licensing Framework (NZGOAL), available at http://www.e.govt.nz/policy/information-data/nzgoalframework.html, accessed 27 August 2009. See also Keitha Booth, *Draft Open Access and Licensing Framework released,* "In Development" website, New Zealand State Services Commission, 27 August 2009 at http://blog.e.govt.nz/index.php/2009/08/27/draft-open-access-and-licensing-framework-released, accessed 27 August 2009.

Government departments should make information available easily, widely and equitably to the people of New Zealand (except where reasons preclude such availability as specified in legislation).

2.   Coverage

Government departments should make the following information increasingly available on an electronic basis:

- all published material or material already in the public domain;
- all policies that could be released publicly;
- all information created or collected on a statutory basis (subject to commercial sensitivity and privacy considerations);
- all documents that the public may be required to complete;
- corporate documentation in which the public would be interested.

3.   Pricing

a)   Free dissemination of Government-held information is appropriate where:
- dissemination to a target audience is desirable for a public policy purpose; or
- a charge to recover the cost of dissemination is not feasible or cost-effective.

b)   Pricing to recover the cost of dissemination is appropriate where:
- there is no particular public policy reason to disseminate the information; and
- a charge to recover the cost of dissemination is both feasible and cost effective.

c)   Pricing to recover the cost of transformation is appropriate where:
- pricing to recover the cost of dissemination is appropriate; and
- there is an avoidable cost involved in transforming the information from the form in which it is held into a form preferred by the recipient, where it is feasible and cost-effective to recover in addition to the cost of dissemination.

d)   Pricing to recover the full costs of information production and dissemination is appropriate where:
- the information is created for the commercial purpose of sale at a profit; and
- to do so would not breach the other pricing principles.

4.   Ownership

Government-held information, created or collected by any person employed or engaged by the Crown is a strategic resource 'owned' by the Government as a steward on behalf of the public.

5.   Stewardship

Government departments are stewards of Government-held information, and it is their responsibility to implement good information management.

6.   Collection

Government departments should only collect information for specified public policy, operational business or legislative purposes.

7.   Copyright

Information created by departments is subject to Crown copyright but where wide dissemination is desirable, the Crown should permit use of its copyrights subject to acknowledgement of source.

8.   Preservation

Government-held information should be preserved only where a public business need, legislative or policy requirement, or a historical or archival reason, exists.

9.   Quality

The key qualities underpinning Government-held information include accuracy, relevancy, timeliness, consistency and collection without bias so that the information supports the purposes for which it is collected.

10. Integrity

The integrity of Government-held information will be achieved when:

- all guarantees and conditions surrounding the information are met;
- the principles are clear and communicated;
- any situation relating to Government-held information is handled openly and consistently;
- those affected by changes to Government-held information are consulted on those changes;
- those charged as independent guardians of the public interest (eg the Ombudsman) have confidence in the ability of departments to manage the information well; and
- there are minimum exceptions to the principles.

11. Privacy

The principles of the Privacy Act 1993 apply.[530]

"New Zealand Government Data Management Policies" (version 1.1), Department of Social Welfare and others (2000)

The New Zealand Government Data Management Policies[531] were developed by a cross-agency group led by then Department of Social Welfare. They provide good practice guidance for internal aspects of agency information and technology management.

The Preface to the document states:

Since the advent of the State Owned Enterprises Act 1986 and the State Sector Act 1988, responsibility for Crown information assets has been devolved within the public service and to state, public and privately owned agencies…[t]he day-to-day management of electronic data and document resources is often in the hands of external commercial service providers. Unless business managers have a clear understanding of where responsibilities lie, and the limitations of technology, the assets are placed at high risk. These policies and standards are intended to address this risk.

This vision for electronic government is that agencies and the public will be able to do business through a standard electronic environment that promotes public participation and trust. Secure and reliable electronic transactions operating with reliable data are a fundamental part of that environment. Without transparent, auditable policies, standards and procedures for data management, there is little chance that agencies will trust each other's data, let alone that the public will have confidence in such systems.

There are three policy sections which aim to cover all the essential business aspects of data management and allow available technology to be applied constructively.

Control policies and standards cover ownership, security, custodianship and related aspects. A structure for

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[530] See "Policy framework for New Zealand Government-held information" website at http://www.ssc.govt.nz/display/document.asp?DocID=4880 accessed on 18 July 2008.
[531] Department of Social Welfare and others (July 2000) *New Zealand Government Data Management Policies* (version 1.1), available at http://www.e.govt.nz/standards/e-gif/data-management/data-management-policies/data-management-policies.pdf.

government-wide policy, standards and monitoring through the function of Crown Data Steward is described.

Definition policies and standards concentrate on identifying and describing data and document assets in a consistent way across government agencies. The objective is to improve the efficiency of data and document exchange, and hence information flow, both within and between agencies, and between agencies and the public.

Integrity policies and standards are aimed at the quality and reliability of data and document assets, and hence the reliability of any information derived from them. They will enable agencies to identify their prime data sources and ensure that content can be retrieved, audited, interchanged and retained to both legislative and business requirements.

These policies and standards are intended to assist agency chief executives and anyone delegated custodial responsibilities for Crown owned data or document assets. They are mandatory for public service departments and contracted agencies handling Crown data and document assets. They are optional but highly desirable for State Owned Enterprises and other organisations funded by the Crown, particularly where information needs to be exchanged.[532]

Policies are set out for:

Ownership

Data collected by or for a government agency under statutory provisions, or by contract, or through an information-matching agreement under the Privacy Act, is owned by the Crown, not the individual agency. Other data may be supplied for use by agreement with an external owner. Business documents created or collected by or for a government agency are owned by the Crown.

Stewardship

The Crown through a responsible minister will appoint a Crown Data Steward with a government-wide mandate to manage and develop the Crown's data and document assets in accordance with established policies and standards.

Custodianship

Every item of data and every business document held by, or maintained for a government agency on behalf of the Crown, will have a Business Custodian and a Physical Custodian.

The role of Business Custodian is assumed by the agency's Chief Executive, who may delegate day-to-day responsibility to an appropriate employee. The role of Physical Custodian will be assigned to the service provider holding the data under an explicit directive or agreement.

Treaty of Waitangi Obligations and Cultural Awareness

Each agency will recognise and meet Treaty of Waitangi obligations and, where Maori are affected, consult with Maori in all issues relating to access, capture, usage, storage, transfer and retention of data and business documents. Each agency will also attempt to accommodate identified cultural, ethnic and religious issues related to data and document management, where they do not conflict with statutory and explicit business requirements.

Charging/Cost Recovery

Agencies may need to recover costs in some cases where information is disseminated from government data or document stores.
Agencies must apply the PFGHI (Policy for Government Held Information) pricing principle where information is disseminated from government data or document stores.
Agencies should refer to *Cabinet Committee Minute CGA(97)M10/1, 16 July 1997, "Government Information Supply Activities"* to determine an appropriate charging regime for the service.
The *Ministry of Justice Charging Services Guidelines* will set the actual price for the service, to ensure consistent pricing across Government.

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[532] Ibid, pp 6-7.

Charges relating to an information privacy request where an individual requests access to, or correction of personal information, are governed by the Privacy Act.

Agencies will work in consultation with Treasury when establishing charging or cost recovery schemes.

Access Rules

The Business Custodian will establish and maintain access rules for the categories of data and business documents under his/her control. Access rules must be based on the principle of public and equitable access to information unless explicit reasons preclude this.

Data Identification

Government agencies will identify data elements for which they hold custodial responsibility by defining and maintaining their metadata in a data catalogue.

Document Identification and Capture

Agencies will create and implement policies and standards to identify and capture all business documents created or received in their processes.

Context

Contextual information about logical business data stores or complex datasets will be captured and stored in the agency's data catalogue.

Contextual information about business documents will be captured and associated with the documents and managed according to organisational policies and standards.

Source

Agencies will be able to identify and locate the prime authoritative source of their data elements and business documents. Where it is cost effective, prime authoritative sources should be held electronically.

Authenticity Integrity and Retrievability

Data and business documents will be managed to preserve and demonstrate their authenticity, integrity, and retrievability to meet business and statutory requirements.

Auditability

Data elements and business documents must be defined in a consistent manner and stored in a consistent format across all stores and, where required by the Business Custodian, changes to form or content must be recorded in an audit trail.

Interchange, Replication and Interfaces

Within legislative provisions and access protocols, information may be interchanged between agencies. The preferred method is via a defined electronic system interface to the appropriate data or document stores.

Retention

Data and business documents will be managed within a defined retention process.[533]

Geospatial Strategy

New Zealand does not have a formal spatial data infrastructure (SDI) or SDI policy.[534] With more than 80 local government agencies responsible for geographic information in their respective

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[533] Ibid, pp 14-15.

[534] On spatial information in NZ generally, see ACIL Tasman, *Spatial Information in the New Zealand Economy: Realising Productivity Gains,* Report for Land Information New Zealand, Department of Conservation and Ministry of Economic Development, August 2009.

regions, traditionally spatial data has been disjointed and difficult to aggregate into a national dataset. Consequently, the approach taken in New Zealand has been to "concentrate on federated geospatial information [with the intention of ensuring that] all the geospatial information collected by the government is made available and is interoperable".[535]

The *New Zealand Geospatial Strategy* was launched in 2007 to encourage sharing of government geospatial data.[536] In 2009, the Ministry for the Environment (Manatū Mō Te Taiao) announced that it was making two important environmental databases - the Land Cover Database (LCD) and Land Environments New Zealand (LENZ) classification - available online, for free and licensed under an unrestricted Creative Commons licence (CC-BY).[537]

"Re-Release of Environmental Databases under Creative Commons Attribution licence", Ministry for the Environment - Manatū Mō Te Taiao (1 July 2009)

On 1 July 2009, the Ministry for the Environment (Manatū Mō Te Taiao) announced that it was making two important environmental databases - the Land Cover Database (LCD) and Land Environments New Zealand (LENZ) classification - available online, for free and licensed under an unrestricted Creative Commons licence.[538] Both of these databases are widely used by government agencies in environmental and resource management planning. By licensing these databases under open licences, members of the public will be able to freely share and distribute environmental data and information without having to seek permission for reuse.[539] In the media statement issued at the re-launch, Dr Len Brown of the department stated that "improving access to the Government's spatial information is a goal of the New Zealand Geospatial Strategy, one that the Ministry is committed to supporting".

"Understanding our Geographic Information Landscape: A New Zealand Geospatial Strategy", Land Information New Zealand in consultation with the State Services Commission and others (2007)

The New Zealand Geospatial Strategy, launched in January 2007, is designed to improve knowledge of, and access to, the geospatial assets owned, maintained or used by government. It recognises government's increasing reliance on geospatial information for a wide range of activities – from emergency services and national defence to utilities, resource management, bio-security and

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[535] Sharon Cottrell, *New Zealand prefers federated information to SDI,* GIS Development, April 2009, available at http://www.gisdevelopment.net/interview/previous/ev0_apr09_sharon.htm, accessed 30 July 2009.

[536] Land Information New Zealand in consultation with the State Services Commission and others, Understanding our Geographic Information Landscape: A New Zealand Geospatial Strategy, (January 2007) available at www.geospatial.govt.nz/assets/Geospatial-Strategy/nz-geospatial-strategy-2007.pdf.

[537] See the Ministry for the Environment New Zealand website at http://www.mfe.govt.nz/ and http://www.mfe.govt.nz/issues/land/land-cover-dbase/index.html accessed on 3 July 2009.

[538] See the Ministry for the Environment New Zealand website at http://www.mfe.govt.nz/ and http://www.mfe.govt.nz/issues/land/land-cover-dbase/index.html accessed on 3 July 2009.

[539] The Land Cover Database and Land Environments New Zealand are now available online at http://www.koordinates.com, a New Zealand company. Upon registration, the Ministry for Environment's GIS data files (total 7 files: 4 LENZ files and 3 LCD files) can be downloaded for free as Shapefiles, MapInfo TAB, CAD (DWG), KML/Google Earth. See http://koordinates.com/maps/environment/ accessed on 7 July 2009.

economic development.[540]

Under the heading, "3.1 Issues", the Geospatial Strategy states:

> Until now, New Zealand's geospatial information has been developed independently by various agencies. In order to exploit the opportunities offered by the new digital environment for efficiencies in the collection, management and provision of geospatial information, new approaches are required to its collective management.
>
> A more integrated and structured approach in New Zealand is needed for managing our geospatial information in order to address geospatial problems, including:
>
> - a lack of knowledge of, and access to, the geospatial information assets owned, maintained or used by government. It is difficult to know what geospatial data exists as there is no easily accessible geospatial metadata service providing discoverability of geospatial datasets. This also leads to duplication of information, fragmentation of effort and inconsistencies among data, systems, standards and processes
>
> - the inability to combine geospatial information to help address the issues of the day. This is caused by proprietary data and systems technology not allowing complete interoperability and the lack of agreed, and available, standards for facilitating geospatial interoperability
>
> - little standardisation of maintenance procedures and mechanisms for assessing how well our geospatial datasets meet collective business requirements. This leads to varying levels of data quality and authoritativeness of geospatial data
>
> - a lack of geospatial capacity within some public agencies and a lack of education about the potential application of geospatial information. This limits the effective use of the spatial systems that are built to support the business activities of government
>
> - the lack of effective governance over geospatial information and systems across the public sector is constraining the contribution that geospatial information is making, and can make, to the day-to-day business activities of all government agencies, as well as making geospatial information less effective in solving the increasingly complex problems facing society. Leadership and coordination of government's geospatial activities is considered essential for the development of an integrated geospatial information environment which can better assist government to undertake its business.
> ......
>
> Along with the strategic opportunities offered by technology, significant benefits can also be gained from taking a coordinated approach to the governance of geospatial resources, as this provides the opportunity to:
>
> - better meet the collective business needs of a wide range of agencies by establishing common agreed standards for fundamental (i.e. priority) geospatial information
>
> - reduce duplication of capture and maintenance processes of geospatial datasets
>
> - enhance the discoverability of, and access to, the authoritative sources of geospatial information.
>
> Geospatial information is also one of the building blocks for information and communications technology innovation. Increasing the availability, access and interoperability of geospatial information will assist this innovation and contribute to the economic transformation of the New Zealand economy. A number of private sector geospatial firms use government geospatial information as a basis for their value-added products and services.[541]

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[540] Land Information New Zealand in consultation with the State Services Commission and others (January 2007) *Understanding our Geographic Information Landscape: A New Zealand Geospatial Strategy,* available at www.geospatial.govt.nz/assets/Geospatial-Strategy/nz-geospatial-strategy-2007.pdf.
[541] Ibid, pp 8-9.

The Geospatial Strategic Goals are described as:

> Four key goals have been identified to provide a coherent approach to addressing geospatial information issues and optimising the collective benefit from public investment in geospatial resources. In line with international best practice these goals can be seen to form the basis of New Zealand's future geospatial data infrastructure.
>
> The four strategic goals are:
>
> 1. **Governance** – establish the governance structure required to optimise the benefits from government's geospatial resources.
>
> 2. **Data** – ensure the capture, preservation and maintenance of fundamental (priority) geospatial datasets, and set guidelines for non-fundamental geospatial data.
>
> 3. **Access** – ensure that government geospatial information and services can be readily discovered, appraised and accessed.
>
> 4. **Interoperability** – ensure that geospatial datasets, services and systems owned by different government agencies can be combined and reused for multiple purposes.[542]

Under "5.4 Access", the Geospatial Strategy states:

> *"This is a priority intervention. It will promote greater use of geospatial information by agencies and the community, and this will help build greater awareness of (and support for) improved data management, including the application of common standards."*[543]
>
> A key component of the Strategy focuses on taking a structured approach to the discovery of, and access to, both fundamental and non-fundamental geospatial datasets. Access arrangements should be geared to maximise the ability to discover, access and use the geospatial resources that public agencies hold. The access arrangements implemented will need to make explicit any constraints on use (privacy constraints, licences, distribution, costs etc).
>
> This is in alignment with e-government initiatives which state the need to develop consistent ways of describing place information across New Zealand agencies, thus making it easier to find location-related information through the government Internet portal (www.govt.nz).
>
> Increasing the discovery of, and access to, the government's geospatial assets also provides a basis for the development of products and services by the innovative and competitive value-adding geospatial industry. In addition, there is a need to access important historic geospatial information, in both digital and hard copy formats.
>
> **5.4.1 Actions**
>
> a) Develop and maintain metadata in accordance with an agreed geospatial metadata standard, and align with international standards.
>
> b) Make fundamental geospatial datasets discoverable and accessible according to agreed policies and standards.
>
> c) Encourage public agencies to make their non-fundamental datasets discoverable and accessible according to best practice policies and standards.

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[542] Ibid, p 16.

[543] Local Government New Zealand and the E-Local Government Strategy Project Team submission, in Land Information New Zealand in consultation with the State Services Commission and others (January 2007) *Understanding our Geographic Information Landscape: A New Zealand Geospatial Strategy,* p 20, available at www.geospatial.govt.nz/assets/Geospatial-Strategy/nz-geospatial-strategy-2007.pdf.

d)   Enable industry to access fundamental geospatial datasets and add value.[544]

NZ National Topographical Map

In accordance with the *Policy Framework for New Zealand Government-held Information* (1997), the NZ national topographical map has been made available online for free.[545]   However, contractual obligations and restrictions are imposed on users who access the following maps through NZTopo*Online*:

- o   New Zealand Geodetic Datum 2000 (NZGD2000);[546]
- o   New Zealand Transverse Mercator 2000 (NZTM2000) projection;[547]
- o   New Zealand Map Grid (NZMG1949) projection;[548] and
- o   Chatham Islands Transverse Mercator (CITM2000) projection.[549]

Users are required to enter into a click-wrap agreement in order to access these NZ topographical maps.[550] Although restrictive licensing terms apply to these maps when downloaded from NZTopo*Online*, some of these maps can also be obtained through the Koordinates website for free, under less restrictive licences.[551]   Some maps are distributed under Creative Commons licences:

- o   NZGD2000 Meridional Circuits (from Land Information New Zealand (LINZ),[552] available under CC BY licence);[553]

- o   2005-06 2.5m LINZ orthophotos (sourced from original projection NZGD2000 / New Zealand Transverse Mercator 2000 from LINZ, available under CC BY licence);[554] and

- o   Chatham Islands Rivers (centrelines) v14 (sourced from original projection Chatham Islands

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[544] Land Information New Zealand in consultation with the State Services Commission and others (January 2007) *Understanding our Geographic Information Landscape: A New Zealand Geospatial Strategy,* pp 20-21, available at www.geospatial.govt.nz/assets/Geospatial-Strategy/nz-geospatial-strategy-2007.pdf.

[545] See "Land Information New Zealand" website at http://www.linz.govt.nz/home/index.html and "NZTopo*Online*" website at http://www.nztopoonline.linz.govt.nz/ accessed on 18 July 2008.

[546]   See   http://www.linz.govt.nz/geodetic/datums-projections-heights/geodetic-datums/new-zealand-geodetic-datum-2000/index.aspx accessed 14 July 2009.

[547]   See   http://www.linz.govt.nz/geodetic/datums-projections-heights/projections/new-zealand-transverse-mercator-2000/index.aspx accessed 14 July 2009.

[548]   See   http://www.linz.govt.nz/geodetic/datums-projections-heights/projections/new-zealand-map-grid/index.aspx accessed on 14 July 2009.

[549]   See   http://www.linz.govt.nz/geodetic/datums-projections-heights/projections/chatham-islands-transverse-mercator-1979/index.aspx accessed on 14 July 2009.

[550]   See   http://www.nztopoonline.linz.govt.nz/terms-nztm-full/index.html   and http://www.nztopoonline.linz.govt.nz/about/terms-conditions/index.html accessed on 7 July 2009.

[551] See see http://koordinates.com/maps/linz/ accessed on 7 July 2009. About 150 LINZ maps are available on the Koordinates website.

[552] LINZ is a government department, which exists to maintain and regulate Crown and private property rights in New Zealand, and to make available the geographic information about New Zealand that underpins property rights, national security and emergency services responses. Find out more about LINZ's responsibilities and management structure. See http://www.linz.govt.nz/find-out/get-to-know-linz/index.aspx.

[553] See http://koordinates.com/layer/194-nzgd2000-meridional-circuits/ accessed 7 July 2009.

[554] See http://koordinates.com/layer/237-2005-06-25m-linz-orthophotos/ accessed 7 July 2009.

Map Grid (NZTopo) from LINZ, available under CC BY licence).[555]

In addition, other topographical LINZ maps may be accessed from the LINZ website under a less restrictive Crown copyright policy:

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Digital Strategy

"Creating A Digital New Zealand: New Zealand's Digital Content Strategy", National Library in collaboration with New Zealand government (2007)

New Zealand's Digital Content Strategy, *Creating a Digital New Zealand*, was launched by Hon. David Cunliffe, (then) Minister for Information Technology and Hon. Judith Tizard, (then) Minister Responsible for the National Library on 6 September 2007. The release of the strategy followed a public consultation process and was supported by a range of new initiatives, including six that were funded in the 2007 Budget.[557]

Creating a Digital New Zealand aims at ensuring that New Zealand is innovative, informed and capable in telling its stories, experiencing its heritage and cultures, and creating its digital future.[558] To that end, the Strategy recognises that the value of content is in what it delivers and enables for end-users. The Strategy presents the key digital content influences in New Zealand's environment, an analysis of digital content issues, and the digital content challenges that face New Zealand as a nation. The first steps towards creating a digital New Zealand are outlined in a series of government actions, and actions from other NZ strategies that contribute to the outcomes of this Strategy are identified.

Digital content is one of the strategic enablers of the Digital Strategy. Access to and creation of content, including the applications that are vital for creating, using and sharing content, is a

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[555] See http://koordinates.com/layer/222-chatham-islands-rivers-centrelines-v14/ accessed 7 July 2009.

[556] See http://www.linz.govt.nz/about-linz/about-this-website/crown-copyright-and-disclaimer/index.aspx accessed on 7 July 2009.

[557] National Library in collaboration with government (August 2007) *Creating a Digital New Zealand: New Zealand's Digital Content Strategy,* available at http://www.digitalstrategy.govt.nz/upload/Main%20Sections/Content/NATLIBDigitalContentStrategy.pdf.

[558] Ibid, p 5.

compelling reason to provide digital connectivity, skills and security. The availability of unique New Zealand content will help drive demand for broadband, improve the return on investment in capability, and create opportunities for commercial use.[559]

The Digital Content Strategy states:

> The development of a digital content strategy was foreshadowed in 2005 as a key action of the government's Digital Strategy. The Digital Strategy is about New Zealand using the power of information and communications technologies to enhance all aspects of our lives. It aspires to give all New Zealanders the ability to enjoy the benefits of the digital world through instant access to our national knowledge resources (whether cultural, scientific, heritage, archival, broadcasting or community); the economic benefits that flow from higher productivity; and government services that are customised to our individual needs.[560]

> The Digital Strategy identifies three enablers for creating a successful digital future – Connection, Confidence and Content (Figure 1). **Connection** includes the provision of high-speed broadband and digital television that will enable the transmission of larger amounts of more complex digital content. It provides the means to interact. **Confidence** relates to skills and a secure on-line environment. It includes providing the capability for New Zealanders to engage in a digital world.

> Access to and creation of **Content**, including the applications that are vital for creating, using and sharing content, provides a compelling means of making the other two enablers effective. The availability of unique New Zealand content will help drive demand for broadband and digital television, improve the return on investment in capability, and create opportunities for community and commercial use.[561]

The Digital Content Strategy considers the application of Creative Commons content to NZ digital content:

> Creative Commons licences let creators (authors, scientists, artists, educators) offer others the freedom to use their creative work under certain specified conditions. To be valid and enforceable under New Zealand law, such licences must conform to current legislation, in particular the Copyright Act.

> Work on the New Zealand licences is being led by Te Whäinga Aronui The Council for the Humanities, on behalf of a coalition of grassroots organisations, creative industries, media, the arts and the humanities research communities. Government agencies including the National Library are being consulted. A private sector legal team is assisting to draft the licences, to be based on the UK-England version of the Creative Commons International licences. An indigenous licence is being considered for possible inclusion. Once drafting is complete, the licences will be accessed through the Creative Commons Aotearoa NZ website at www.creativecommons.org.nz, where current information on the licences can also be obtained.
> ……

> **Unlocking publicly owned content**

> While much of the 'Web 2.0' discussion focuses on commercial content, the largest holders of content in New Zealand are central and local government and their associated public bodies.

> In analogue form, much of this content is either inaccessible or only accessible through limited mechanisms. In digital form however, physical constraints (storage space, the need to protect original records from loss or

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[559] Ibid.

[560] *The Digital Strategy: Creating Our Digital Future,* p 6, www.digitalstrategy.govt.nz. See National Library in collaboration with government (August 2007) *Creating a Digital New Zealand: New Zealand's Digital Content Strategy,* p 5, available at http://www.digitalstrategy.govt.nz/upload/Main%20Sections/Content/NATLIBDigitalContentStrategy.pdf.

[561] National Library in collaboration with government (August 2007) *Creating a Digital New Zealand: New Zealand's Digital Content Strategy,* p 5, available at http://www.digitalstrategy.govt.nz/upload/Main%20Sections/Content/NATLIBDigitalContentStrategy.pdf.

damage, opening hours and location of offices) are removed, providing a basis for rethinking our approach to official information, public records and public datasets.

Governments around the world are taking seriously their information responsibilities, and making the workings and records of government agencies routinely open to the public in digital form. In New Zealand, making more public records available digitally will contribute significantly to the purpose of the Official Information Act (OIA) as well as to building the formal public digital space.

The potential for the public good may be much higher when official information is digital, and may require government agencies to rethink their existing approach to user charges and copyright uses. For example, in Canada, since April 2007, the government has removed all user charges for electronic topographical mapping data, and permitting people to freely redistribute the data, in a way that will help ensure users receive accurate and consistent information, and lead to knowledge development, innovations, and improved productivity.

In New Zealand, where Crown copyright lasts for 100 years, there is scope to consider appropriate copyright permissions for commercial use and adoption of standard form licences to promote easy public sharing and re-use of official information. Both commercial and non-commercial users should be able to benefit from vital data that can lead to a public good outcome for government.[562]

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[562] Ibid, pp 20 and 30.

Chapter 3: International

The importance of adopting an international approach to information access and re-use has long been recognised, whether the focus is on scientific research data, environmental data, spatial information or other kinds of information produced with public funding.   From an overview of international initiatives, it is apparent that the sense of urgency in promoting better access to public information and publicly funded research data has grown, along with the realisation of the nature and magnitude of the environmental, social and economic issues confronting the global community.

The United Nations and its specialised agencies have issued numerous official resolutions, declarations and reports addressing the development of policies on access to and reuse of government information.[563] Within the United Nations system, UNESCO played an important role from the late 1990s in the development of policy guidelines. The growing awareness of the importance of access to information is particularly apparent in the work of intergovernmental bodies such as the Organisation for Economic Cooperation and Development (OECD) and the International Council for Science (ICSU). One of the most dynamic and productive of the international organisations, especially during the 2000s, has been the OECD.[564] During the last decade the OECD, through its Directorate for Science, Technology and Policy,[565] has examined the social and economic implications of the development and use of information and communication technologies, the internet and e-business. As well as the principles contained in declarations by UN agencies and intergovernmental organisations, statements of principles relating to open access to research data and academic publications are found in declarations of non-government organisations and groups operating at the international level.

United Nations bodies

"Rio Declaration on Environment and Development", United Nations Conference on Environment and Development (1992)

The importance of scientific research and open access to information relating to the environment is recognised in two key documents negotiated at the United Nations Conference on Environment and Development in 1992, the *Rio Declaration on Environment and Development*[566] and the *United Nations Framework Convention on Climate Change*. (UNFCCC).[567] Principle 9 of the *Rio*

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[563] Paul Uhlir, *Policy Guidelines for the Development and Promotion of Governmental Public Domain Information,* UNESCO, Paris, 2004 at p 1.

[564] The OECD is a group of 30 member countries (including Australia) which aim to facilitate and promote good governance. See http://www.oecd.org/about/0,2337,en_2649_201185_1_1_1_1_1,00.html.

[565] See http://www.oecd.org/department/0,3355,en_2649_33703_1_1_1_1_1,00.html.

[566] *Rio Declaration on Environment and Development*, United Nations General Assembly, United Nations Conference on Environment and Development, 12 August 1992, United Nations document no. A/CONF.151/26 (Vol.I), available at available at http://www.un.org/documents/ga/conf151/aconf15126-1annex1.htm.

[567] *United Nations Framework Convention on Climate Change*, United Nations, 1992, United Nations document no. FCCC/INFORMAL/84, GE.05-62220 (E) 200705, available at http://unfccc.int/resource/docs/convkp/conveng.pdf. Australia signed the UNFCC on 4 June 1992 and ratified it on 30 December 1992. The UNFCC came into force on 21 March 1994.

Declaration requires states to cooperate to strengthen their capacity for sustainable development "by improving scientific understanding through exchanges of scientific and technological knowledge" while Principle 10 requires, at the national level, that "each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision making". The Rio Declaration also reaffirmed the Declaration of the United Nations Conference on the Human Environment, adopted at Stockholm on 16 June 1972.

The Rio Declaration includes the following principles:

> **Principle 9**
> States should cooperate to strengthen endogenous capacity-building for sustainable development by improving scientific understanding through exchanges of scientific and technological knowledge, and by enhancing the development, adaptation, diffusion and transfer of technologies, including new and innovative technologies.
>
> **Principle 10**
> Environmental issues are best handled with participation of all concerned citizens, at the relevant level. At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes. States shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided.[568]

United Nations Framework Convention on Climate Change (UNFCCC), United Nations (1992)

The UNFCCC commits parties to the Convention to promote and cooperate "in scientific, technological, technical, socio-economic and other research, systematic observation and development of data archives related to the climate system"[569] as well as to "the full, open and prompt exchange of relevant scientific, technological, technical, socio-economic and legal information related to the climate system and climate change, and to the economic and social consequences of various response strategies".[570] These commitments were expanded upon by a decision at the Conference of the Parties in 1998 which recognised the importance of national contributions to global climate observing systems.[571] It urges parties to "undertake free and unrestricted exchange of data to meet the needs of the Convention, recognising the various policies on data exchange of relevant international and intergovernmental organisations".

The UNFCC provides:

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[568] *Rio Declaration on Environment and Development*, United Nations General Assembly, United Nations Conference on Environment and Development, 12 August 1992, United Nations document no. A/CONF.151/26 (Vol.I), available at available at http://www.un.org/documents/ga/conf151/aconf15126-1annex1.htm.

[569] Ibid. Article 4.1(g).

[570] Ibid. Article 4.1(h).

[571] *Research and systematic observation – Recommendation of the Subsidiary Body for Scientific and Technological Advice*, UNFCCC, Conference of the Parties, Buenos Aires, November 1998, FCCC/CP/1998/L.4, available at http://unfcc.int/cop4/.

Article 4: Commitments

1. All Parties, taking into account their common but differentiated responsibilities and their specific national and regional development priorities, objectives and circumstances, shall:

...

g) Promote and cooperate in scientific, technological, technical, socio-economic and other research, systematic observation and development of data archives related to the climate system and intended to further the understanding and to reduce or eliminate the remaining uncertainties regarding the causes, effects, magnitude and timing of climate change and regarding the economic and social consequences of various response strategies;

h) Promote and cooperate in the full, open and prompt exchange of relevant scientific, technological, technical, socio-economic and legal information related to the climate change, and to the economic and social consequences of various response strategies…[572]

At the November 1998 Conference of the Parties (COP) to the UNFCC, the parties adopted a decision which expands on the environmental information commitments in Article 4.1 and relates them to the role of global observing systems in collecting and disseminating climate-related data.[573] After acknowledging the "significant national contributions made to the global observing systems for climate", the decision encourages the parties to undertake a range of activities:

1. Urges Parties to undertake programmes of systematic observation including the preparation of specific national plans, in response to requests from agencies participating in the Climate Agenda, based on the information developed by the Global Climate Observing System and its partner programmes;

2. Urges Parties to undertake free and unrestricted exchange of data to meet the needs of the Convention, recognizing the various policies on data exchange of relevant international and intergovernmental organizations;

3. Urges Parties to actively support the building of capacity in developing countries, to enable them to collect, exchange and utilize data to meet local, regional and international needs;

4. Urges Parties to strengthen international and intergovernmental programmes assisting countries to acquire and use climate information;

5. Urges Parties to actively support national meteorological and atmospheric observing systems, including measurement of greenhouse gases, to ensure that the stations identified as elements of the Global Climate Observing System networks, based on the World Weather Watch and Global Atmosphere Watch, and underpinning the needs of the Convention are fully operational and use best practices;

6. Urges Parties to actively support national oceanographic observing systems, to ensure that the elements of the Global Climate Observing System and Global Ocean Observing System networks in support of ocean climate observations are implemented and, to the extent possible, support an increase in the number of ocean observations, particularly in remote locations, and to establish and maintain reference stations;

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[572] *United Nations Framework Convention on Climate Change*, United Nations, 1992, United Nations document no. FCCC/INFORMAL/84, GE.05-62220 (E) 200705, available at http://unfccc.int/resource/docs/convkp/conveng.pdf . Australia signed the UNFCC on 4 June 1992 and ratified it on 30 December 1992. The UNFCC came into force on 21 March 1994.

[573] *Research and systematic observation – Recommendation of the Subsidiary Body for Scientific and Technological Advice*, UNFCCC, Conference of the Parties, Buenos Aires, November 1998, FCCC/CP/1998/L.4, available at http://unfcc.int/cop4/.

7. Urges Parties to actively support national terrestrial networks including observational programmes to collect, exchange and preserve terrestrial data according to the Global Climate Observing System and the Global Terrestrial Observing System climate priorities and particularly hydrosphere, cryosphere and ecosystem observations;

8. Requests Parties to submit information on national plans and programmes in relation to their participation in global observing systems for climate, in the context of reporting on research and systematic observation, as an element of national communications for Annex I Parties and as appropriate for non-Annex I Parties;

9. Requests the Subsidiary Body for Scientific and Technological Advice, in consultation with the agencies participating in the Climate Agenda, drawing, inter alia, on the information provided in the second national communications of Annex I Parties and, as appropriate, in the initial national communications of non-Annex I Parties, to inform the Conference of the Parties at its fifth session of developments regarding observational networks, difficulties encountered, inter alia, with respect to the needs of developing countries and options for financial support to reverse the decline in observational networks;

10. Invites the agencies participating in the Climate Agenda, in consultation with the Global Climate Observing System Secretariat, to initiate an intergovernmental process for addressing the priorities for action to improve global observing systems for climate in relation to the needs of the Convention and, in consultation with the Convention secretariat and other relevant organizations, for identifying immediate, medium-term and long-term options for financial support; and requests the secretariat to report results to the Subsidiary Body for Scientific and Technological Advice at its tenth session.

"Aarhus Convention on Access to Information, Public Participation in Decision Making, and Access to Justice in Environmental Matters", United Nations Economic Commission for Europe (UNECE) (1998)

The Aarhus Convention, signed on 25 June 1998, represented a major advance in access and reuse policy development by providing for the introduction of legally enforceable rights for citizens to access environmental information held by government, with a prescribed process for redress if information is not provided. The Aarhus Convention was, in turn, informed by the UN Rio Declaration on Environment and Development (1992).

The Convention establishes obligations for contracting parties and their public authorities (as defined) regarding access to information, public participation, and access to justice - the Convention's three pillars or themes.[574] Its fundamental objective is stated in Article 1:

In order to contribute to the protection of the right of every person of present and future generations to live in an environment adequate to his or her health and well-being, each Party shall guarantee the rights of access to information, public participation in decision-making, and access to justice in environmental matters in accordance with the provisions of this Convention.[575]

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[574] See http://www.unece.org/env/pp/ accessed on 13 January 2009.

[575] The text of the Convention is available at http://www.unece.org/env/pp/treatytext.htm. "Environmental information" is defined in Article 2, paragraph 3, as meaning:

…[A]ny information in written, visual, aural, electronic or any other material form on:

(a) The state of elements of the environment, such as air and atmosphere, water, soil, land, landscape and natural sites, biological diversity and its components, including genetically modified organisms, and the interaction among these elements;
(b) Factors, such as substances, energy, noise and radiation, and activities or measures, including administrative measures, environmental agreements, policies, legislation, plans and programmes, affecting or likely to affect the elements of the environment within the scope of subparagraph (a)

When commenting on the Convention, Kofi A. Annan, former Secretary-General of the United Nations stated that:

> [a]lthough regional in scope, the significance of the Aarhus Convention is global. It is by far the most impressive elaboration of principle 10 of the Rio Declaration, which stresses the need for citizen's participation in environmental issues and for access to information on the environment held by public authorities…As such it is the most ambitious venture in the area of environmental democracy so far undertaken under the auspices of the United Nations.[576]

The main thrust of the obligations contained in the Convention is towards public authorities, which are defined to cover governmental bodies from all sectors and at all levels (national, regional, local, etc.) and bodies performing public administrative functions. Although the Convention is not primarily focussed on the private sector, privatised bodies having public responsibilities in relation to the environment and which are under the control of relevant public authorities also fall within the scope of the definition. Bodies acting in a judicial or legislative capacity are excluded.

The Convention contains a number of important general features, including the rights-based approach expressed in Article 1 which requires Parties to guarantee rights of access to information, public participation in decision-making and access to justice in environmental matters. It also refers to the goal of protecting the right of every person of future and present generations to live in an environment adequate to health and well-being, which represents a significant step forward in international law. These rights underpin the procedural requirements in the Convention.

Article 5 deals with the collection and dissemination of environmental information by public authorities in contracting parties to the Convention:

> 1. Each Party shall ensure that:
>
> > (a) Public authorities possess and update environmental information which is relevant to their functions;
> > (b) Mandatory systems are established so that there is an adequate flow of information to public authorities about proposed and existing activities which may significantly affect the environment;
> > (c) In the event of any imminent threat to human health or the environment, whether caused by human activities or due to natural causes, all information which could enable the public to take measures to prevent or mitigate harm arising from the threat and is held by a public authority is disseminated immediately and without delay to members of the public who may be affected.
>
> 2. Each Party shall ensure that, within the framework of national legislation, the way in which public authorities make environmental information available to the public is transparent and that environmental information is effectively accessible, inter alia, by:
>
> > (a) Providing sufficient information to the public about the type and scope of environmental information held by the relevant public authorities, the basic terms and conditions under which such information is made available and accessible, and the process by which it can be obtained;
> > (b) Establishing and maintaining practical arrangements, such as:
> > > (i) Publicly accessible lists, registers or files;
> > > (ii) Requiring officials to support the public in seeking access to information under this Convention; and

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above, and cost-benefit and other economic analyses and assumptions used in environmental decision-making;
(c) The state of human health and safety, conditions of human life, cultural sites and built structures, inasmuch as they are or may be affected by the state of the elements of the environment or, through these elements, by the factors, activities or measures referred to in subparagraph (b) above.

[576] Ibid.

> (iii) The identification of points of contact; and
>
> (c) Providing access to the environmental information contained in lists, registers or files as referred to in subparagraph (b) (i) above free of charge.[577]

The Convention provides for the processes for applying for environmental information and specifies certain exemptions to requests for information.[578]

Article 9 sets out the rights to access justice conferred on a party unsuccessfully requesting environmental information.[579]

"Declaration of Principles and Action Plan", World Summit on the Information Society (WSIS) (2003)

The World Summit on Information Society (WSIS) was a United Nations-sponsored conference that convened in two phases - in Geneva in 2003 and in Tunis in 2005. The Geneva phase produced the Declaration of Principles and Action Plan (adopted on 12 December 2003).[580] The Geneva Action Plan described eleven action lines.[581]

The WSIS Declaration of Principles sets out some overarching principles for the information society, including:

- everyone has the right to freedom of opinion and expression, including the right to receive and impart information through any media regardless of frontiers;

- the sharing and strengthening of global knowledge for development can be enhanced by removing barriers to equitable access to information for economic, social, political, health, cultural, education and scientific activities; and

- the wide dissemination, diffusion and sharing of knowledge is important to encourage innovation and creativity.[582]

Article 26 of the Declaration of Principles stated that:

> A rich public domain is an essential element for the growth of the Information Society, creating multiple benefits such as an educated public, new jobs, innovation, business opportunities, and the advancement of

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[577] The text of the Convention is available at http://www.unece.org/env/pp/treatytext.htm.

[578] Article 4 deals with Access to Environmental Information. The grounds for exemption are specified in paragraphs 3 and 4 of that Article and include where providing the information requested would adversely affect "international relations, national defence and public security" (para 4 (b)), "intellectual property" (para 4(e), and "the confidentiality of personal data ..relating to a natural person where the person has not consented to the disclosure to the public, [and] where such confidentiality is provided for in national law" (para 4(f)).

[579] See Article 9, paragraph 1, extracted in Appendix 1.

[580] World Summit on the Information Society – WSIS, *Declaration of Principles – Building the Information Society: a global challenge in the new Millennium*, WSIS-03/GENEVA/DOC/4-E, 12 December 2003, available at http://www.itu.int/wsis/documents/index.html; and WSIS, *Plan of Action*, WSIS-03/GENEVA/DOC/5-E, 12 December 2003, available at http://www.itu.int/wsis/documents/index.html.

[581] For information about how UNESCO is progressing the WSIS Action Plan see http://portal.unesco.org/ci/en/ev.php-URL_ID=15868&URL_DO=DO_TOPIC&URL_SECTION=201.html. For Access to Information and Knowledge, see http://www.unesco-ci.org/cgi-bin/wsis/database/page.cgi?g=_Access_to_Information_and_Knowledge/index.html&d=1.

[582] See http://www.itu.int/wsis/docs/geneva/official/dop.html accessed on 13 February 2007.

sciences. Information in the public domain should be easily accessible to support the Information Society, and protected from misappropriation. ...

To this end, WSIS attendees stated:

We strive to promote universal access with equal opportunities for all to scientific knowledge and the creation and dissemination of scientific and technical information, including open access initiatives for scientific publishing.[583]

The WSIS Declaration committed the attendees to promote:

1. the long-term systematic and efficient collection, dissemination and preservation of essential scientific digital data, for example, population and meteorological data in all countries; and

2. principles and meta data standards to facilitate cooperation and effective use of collected scientific information and data as appropriate to conduct scientific research.[584]

Another focus of the WSIS Declaration was to turn "the digital divide into a digital opportunity" for developing countries in particular, where the benefits of information technology are unevenly distributed between rich and poor.[585]

Action Line C3 – Access to Information and Knowledge, states:

ICTs allow people, anywhere in the world, to access information and knowledge almost instantaneously. Individuals, organizations and communities should benefit from access to knowledge and information.

a) Develop policy guidelines for the development and promotion of public domain information as an important international instrument promoting public access to information.

b) Governments are encouraged to provide adequate access through various communication resources, notably the Internet, to public official information. Establishing legislation on access to information and the preservation of public data, notably in the area of the new technologies, is encouraged.

c) Promote research and development to facilitate accessibility of ICTs for all, including disadvantaged, marginalized and vulnerable groups.

d) Governments, and other stakeholders, should establish sustainable multi-purpose community public access points, providing affordable or free-of-charge access for their citizens to the various communication resources, notably the Internet. These access points should, to the extent possible, have sufficient capacity to provide assistance to users, in libraries, educational institutions, public administrations, post offices or other public places, with special emphasis on rural and underserved areas, while respecting intellectual property rights (IPRs) and encouraging the use of information and sharing of knowledge.

e) Encourage research and promote awareness among all stakeholders of the possibilities offered by different software models, and the means of their creation, including proprietary, open-source and free software, in order to increase competition, freedom of choice and affordability, and to enable all stakeholders to evaluate which solution best meets their requirements.

f) Governments should actively promote the use of ICTs as a fundamental working tool by their citizens and local authorities. In this respect, the international community and other stakeholders should support capacity building for local authorities in the widespread use of ICTs as a means of improving local governance.

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[583] See http://www.wsis-si.org/UNESCO/C7.e-science-texts.html.
[584] Ibid.
[585] See http://www.itu.int/wsis/docs/geneva/official/dop.html at 13 February 2007.

g) Encourage research on the Information Society, including on innovative forms of networking, adaptation of ICT infrastructure, tools and applications that facilitate accessibility of ICTs for all, and disadvantaged groups in particular.

h) Support the creation and development of a digital public library and archive services, adapted to the Information Society, including reviewing national library strategies and legislation, developing a global understanding of the need for "hybrid libraries", and fostering worldwide cooperation between libraries.

i) Encourage initiatives to facilitate access, including free and affordable access to open access journals and books, and open archives for scientific information.

j) Support research and development of the design of useful instruments for all stakeholders to foster increased awareness, assessment, and evaluation of different software models and licences, so as to ensure an optimal choice of appropriate software that will best contribute to achieving development goals within local conditions.[586] [emphasis added]

The second phase of WSIS produced the Tunis Agenda for the Information Society, adopted on 18 November 2005.[587] The Tunis phase reaffirmed the principles established at Geneva phase and reiterated that:

> Access to information and sharing and creation of knowledge contributes significantly to strengthening economic, social and cultural development.

The attendees recognised that open access to information could not be achieved without first creating a trustworthy, transparent and non-discriminatory legal and policy environment. They placed some reliance on governments to develop and adopt regulatory frameworks, stating:

> We are convinced that our goals can be accomplished through the involvement, cooperation and partnership of governments and other stakeholders, i.e. the private sector, civil society and international organizations.

Since WSIS, work has proceeded on the eleven action lines described in the Geneva Action Plan. For each action line, a UN organisation (eg ITU or UNESCO) was appointed as a "facilitator" or "moderator". Beginning in 2006, various facilitation and consultation meetings have taken place. At a meeting in Geneva in May 2007, Action Lines were developed to implement the principles and goals set out in the WSIS sessions of 2003 and 2005. UNESCO organised facilitation meetings on WSIS Action Line C7 (ICT applications – benefits in all aspects of life, including e-science) and Action Line C3 (access to information and knowledge).

The Internet Governance Forum (IGF)[588] is a direct outcome of the World Summit on the Information Society (WSIS).[589] The Tunis Agenda invited the UN Secretary General to convene a new forum for multi-stakeholder policy dialogue – the IGF.[590] The inaugural meeting of the IGF was in Athens, Greece from 30 October to 2 November.[591] The second IGF meeting was held in Rio

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[586] See http://portal.unesco.org/ci/en/ev.php-URL_ID=15920&URL_DO=DO_TOPIC&URL_SECTION=201.html.
[587] Second Phase of the WSIS (16-18 November 2005, Tunis), *Tunis Agenda for the Information Society*, WSIS-05/TUNIS/DOC/6 (rev. 1), available at http://www.itu.int/wsis/documents/doc_multi.asp?lang=en&id=2267%7C0 accessed 29 May 2009.
[588] See http://www.intgovforum.org/cms/ accessed on 29 May 2009.
[589] See generally http://www.intgovforum.org/cms/ and *Internet Governance Forum – the first two years*, available at http://www.intgovforum.org/cms/index.php/component/content/article/57-2008igf/311-internet-governance-forum-the-first-two-years.
[590] *Tunis Agenda for the Information Society,* Para 67, available at http://www.itu.int/wsis/docs2/tunis/off/6rev1.html accessed on 29 May 2009.
[591] See http://www.intgovforum.org/cms/index.php/athensmeeting.

de Janeiro in November 2007 and the third was held in Hyderabad in December 2008.

World Meteorological Organization (WMO)

The World Meteorological Organisation (WMO)[592] is a specialised agency of the United Nations. It has 185 member states and territories which coordinate the collection and exchange of information on the state of the global atmosphere, ocean and inland waters and support the provision of essential meteorological and related services in individual countries and for international shipping and aviation.

At the July 1995 Congress of the WMO, faced with a resolution which would have required members to enforce restrictions on certain categories of information for the commercial benefit of other nations, the US proposed a compromise which was accepted. The compromise explicitly affirmed the fundamental principle that governmental meteorological information – like other scientific, technical and environmental information – should be shared between nations without restriction.[593]

Resolution 40 (WMO Policy and practice for the exchange of meteorological and related data and products including guidelines on relationships in commercial meteorological activities) states:

> As a fundamental principle of the World Meteorological Organization (WMO), and in consonance with the expanding requirements for its scientific and technical expertise, WMO commits itself to broadening and enhancing the free and unrestricted exchange of meteorological and related data and products.[594]

Resolution 40 recognised that individual nations may in particular cases apply their own domestic copyright and similar laws to prevent what they deem to be unfair or inappropriate competition within their own territories. The compromise reached in Resolution 40 left open the possibility of further consultation on whether government information policy in global information infrastructure would follow the "open and unrestricted access" model favoured by the US and several other nations, or whether it should follow the "government commercialisation" model adopted by others.

These arrangements resulted in the Australian Bureau of Meteorology having access to meteorological data and information generated overseas, including satellite data, meteorological observations and forecast guidance material. It has been estimated that the introduction of any realistically conceivable market framework for international trade of basic meteorological data would result in a rise in cost to Australia of maintaining its current level (quality and quantity) of meteorological service provision by a factor of two to ten or more.

> In recognition of the need for increased global water resources assessment, the WMO adopted a further policy in 1995 recognising the principle of free and unrestricted exchange of hydrological data and products (Resolution 25, Cg-XIII, 1995).

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[592] See http://www.wmo.int/pages/index_en.html.
[593] For background, see Appendix IV to OMB Circular A-130 – Analysis of key sections at http://www.whitehouse.gov/omb/circulars/a130/a130appendix_iv.html.
[594] See http://www.nws.noaa.gov/im/wmor40.htm.

Other international organisations

"Seoul Declaration on the Future of the Internet Economy", OECD Ministerial Meeting (2008)

The OECD is a group of 30 member countries (including Australia) which aim to facilitate and promote good governance.[595] The OECD:

> produces internationally agreed instruments, decisions and recommendations to promote rules of the game in areas where multilateral agreement is necessary for individual countries to make progress in a globalised economy.[596]

During the last decade the OECD,[597] through its Directorate for Science, Technology and Policy[598] and, in particular, the Working Party on the Information Economy (WPIE) within that Directorate,[599] has examined the social and economic implications of the development and use of information and communication technologies, the internet and e-business. The WPIE has focused on a range of issues including digital content and taken a leading role in the development of international policy on access to PSI and publicly funded research outputs.[600]

At the OECD Ministerial Meeting on the Future of the Internet Economy held in Seoul, Korea in June 2008 the Ministers endorsed and adopted the Seoul Declaration on the Future of the Internet Economy,[601] to which are annexed several OECD documents including the *Principles and Guidelines for Access to Research Data from Public Funding* and the *Recommendation of the Council for Enhanced Access and More Effective Use of Public Sector Information*.[602] As a member of the OECD and a signatory to the *Seoul Declaration on the Future of the Internet Economy*, *Principles and Guidelines for Access to Research Data from Public Funding* and the *Recommendation of the Council for Enhanced Access and More Effective Use of Public Sector Information*, Australia is committed (although not strictly legally bound) to implementing the principles which they set out. OECD Recommendations are OECD legal instruments that set out standards or objectives which OECD member countries are expected to implement, although they are not legally binding. However, through long-standing practice of member countries, a Recommendation is considered to have great moral force.[603]

An extract from the text of the Seoul Declaration on the Future of the Internet Economy is set out in Appendix 1.

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[595] See http://www.oecd.org/about/0,2337,en_2649_201185_1_1_1_1_1,00.html.

[596] Ibid.

[597] For an overview of recent OECD activity in relation to digital content and public sector information, see http://www.epsiplus.net/reports/oecd_psi_reports_presentations.

[598] See http://www.oecd.org/department/0,3355,en_2649_33703_1_1_1_1_1,00.html.

[599] See http://www.oecd.org/sti/information-economy.

[600] For example, on 4 – 5 February 2008 the WPIE co-hosted a workshop on "The Socioeconomic Effects of Public Sector Information on Digital Networks: Towards a Better Understanding of Different Access and Reuse Policies", see http://www.oecd.org/document/48/0,3343,en_2649_33757_40046832_1_1_1_1,00.html accessed on 29 May 2009.

[601] OECD, *Seoul Declaration on the Future of the Internet Economy,* 18 June 2008, available at http://www.oecd.org/dataoecd/49/28/40839436.pdf.

[602] See OECD, *Shaping Policies for the Future of the Internet Economy,* Annexes, available at http://www.oecd.org/dataoecd/1/28/40821729.pdf.

[603] OECD, *Principles and Guidelines for Access to Research Data from Public Funding*, 2007, see http://www.oecd.org/dataoecd/9/61/38500813.pdf at p 8.

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"Ministerial Declaration on Access to Research Data from Public Funding" (2004) and "Recommendation of the Council concerning Access to Research Data from Public Funding" (2006), Organisation for Economic Co-operation and Development (OECD)

At a meeting in Paris in January 2004, the OECD member countries adopted the Ministerial Declaration on Access to Research Data from Public Funding.[604] The Declaration recognised that:

> An optimum international exchange of data, information and knowledge contributes decisively to the advancement of scientific research and innovation.[605]

OECD member countries declared their commitment to work towards establishing open access regimes for digital research data derived from publicly funded projects, in accordance with specific objectives and principles: openness, transparency, legal conformity, formal responsibility, professionalism, protection of intellectual property, interoperability, quality and security, efficiency and accountability. The Declaration invited OECD members "to develop guidelines based on commonly agreed principles to facilitate optimal cost-effective access to digital research data from public funding", for endorsement by the OECD Council.[606] In response, the OECD's Committee for Scientific and Technological Policy convened a group of experts to develop a set of principles and guidelines.

Following several rounds of consultation with research organisations and policy making bodies in OECD member countries to achieve consensus, the Committee for Scientific and Technological Policy published the *Principles and Guidelines for Access to Research Data from Public Funding,*[607] which are designed to provide guidance on enhancing international cooperation in research. The principles and guidelines were approved by the OECD's Committee for Scientific and Technological Policy in October 2006.

On 14 December 2006, the OECD Council endorsed the *Principles and Guidelines for Access to Research Data from Public Funding*, attached to an OECD Recommendation to member countries to take the Principles and Guidelines into consideration (taking account of differences in their national context) "to develop policies and good practices related to the accessibility, use and management of research data." [608]

The Principles and Guidelines set out broad policy recommendations to the governmental science

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[604] OECD, *Declaration on Access to Research Data from Public Funding*, adopted on 30 January 2004 in Paris at the Meeting of the OECD Committee for Scientific and Technological Policy at Ministerial Level, available at http://www.oecd.org/document/15/0,2340,en_2649_201185_25998799_1_1_1_1,00.html accessed on 29 May 2009.

[605] Ibid, Recitals, as at Annex 1.

[606] See http://www.oecd.org/document/0,2340,en_2649_34487_25998799_1_1_1_1,00.html as at Annex 1; see further below, *OECD Recommendation of the Council for Enhanced Access and More Effective use of PSI*, OECD (2008) for more detail on these agreed principles.

[607] See http://www.oecd.org/dataoecd/9/61/38500813.pdf.

[608] OECD, *Recommendation of the Council concerning Access to Research Data from Public Funding C(2006)184*, http://webdomino1.oecd.org/horizontal/oecdacts.nsf/Display/3A5FB1397B5ADFB7C12572980053C9D3?OpenDocument accessed on 29 May 2009.

policy and funding bodies of OECD members on access to research data and public funding.[609] Their intention is to:

> promote data access and sharing among researchers, research institutions, and national research agencies, while at the same time, recognising and taking into account, the various national laws, research policies and organisational structures of Member countries.[610]

The Principles and Guidelines apply to research data gathered using public funds for the purpose of producing publicly accessible knowledge. They are principally aimed at research data in digital, computer-readable format, although they could apply to analogue research data in situations where the marginal costs of giving access to such data can be kept reasonably low. For the purposes of the Principles and Guidelines, "research data" is defined as:

> factual records (numerical scores, textual records, images and sounds) used as primary sources for scientific research, and that are commonly accepted in the scientific community as necessary to validate research findings. A research data set constitutes a systematic, partial representation of the subject being investigated.[611]

The relevance of the OECD's Ministerial Declaration on Access to Research Data from Public Funding (2004) to the development of strategic frameworks for scientific data management was acknowledged in Australia by the Prime Minister's Science, Engineering and Innovation Council (PMSEIC) Data for Science Working Group in its 2006 report, *From Data to Wisdom: Pathways to Successful Data Management for Australian Science* (2006).[612] The PMSEIC Data for Science Working Group recommended that the OECD guidelines should be taken into account in the development of a strategic framework for management of research data in Australia.[613]

An extract from the text of this OECD document is contained in Appendix 1.

"OECD Recommendation of the Council for Enhanced Access and More Effective Use of Public Sector Information", OECD (2008)

On 30 April 2008, the OECD Council adopted the *Recommendation of the Council for Enhanced Access and More Effective Use of Public Sector Information.*[614] This Recommendation was developed by the OECD Committee for Information, Computer and Communication Policy, particularly its Working Party on the Information Economy (WPIE). Work on the principles of the

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[609] For comment, see Dirk Pilat and Yukiko Fukasaku, *The Principles and Guidelines for Access to Research Data*, Data Science Journal, Vol. 6, Open Data Issue, 17 June 2007.

[610] OECD, Committee for Scientific and Technological Policy, *Principles and Guidelines for Access to Research Data from Public Funding* (2006) p 13, available at http://www.oecd.org/dataoecd/9/61/38500813.pdf accessed on 29 May 2009.

[611] Ibid.

[612] Prime Minister's Science, Engineering and Innovation Council, Working Group on Data for Science, *From Data to Wisdom: Pathways to Successful Data Management for Australian Science*, (2006) http://www.dest.gov.au/sectors/science_innovation/publications_resources/profiles/Presentation_Data_for_Science.htm accessed on 26 March 2007.

[613] Ibid, Recommendation 9.

[614] OECD Committee for Information, Computer and Communication Policy , *OECD Recommendation of the Council for Enhanced Access and More Effective Use of Public Sector Information*, C(2008)36, available at http://www.oecd.org/dataoecd/0/27/40826024.pdf.

Recommendation was initiated in 2007, on the basis of prior analytical work.[615]

The principles identified in this OECD Recommendation are, to a considerable degree, the product of an ongoing evolutionary process, in which policies and principles enunciated in various earlier initiatives have been assessed for ongoing relevance and then have been either rejected, approved or modified. The Preamble to the Recommendation makes reference to the Recommendation of the Council concerning Access to Research Data from Public Funding [C(2006)184] and the Recommendation of the Council on Broadband Development [C(2003)259].[616] The Preamble acknowledges the aim of increasing returns on PSI and increasing "economic and social benefits from better access and wider use and re-use, in particular through more efficient distribution, enhanced innovation and development of new uses", as well as the aim of promoting "more efficient distribution of information and content" and "the development of new information, products and services, particularly through market-based competition among re-users of information".[617]

 "Public sector information" is broadly defined for the purposes of the Recommendation as:

> information, including information products and services, generated, created, collected, processed, preserved, maintained, disseminated, or funded by or for the Government or public institution", taking into account the legal requirements and restrictions referred to in the last paragraph of the preamble of this Recommendation.

The Preamble to the Recommendation recognises that:

> efforts to improve the access and use of public sector information need to take into account legal requirements and restrictions, including intellectual property rights and trade secrets, effective and secure management of personal information, confidentiality and national security concerns, and fundamental principles including democracy, human rights and freedom of information and that, consequently, certain principles contained in this Recommendation regarding in particular openness and re-use, can be applied to a different extent to different categories of public sector information;

"Re-use" is defined as including:

> use by the original public sector generator or holder or other public sector bodies and further re-use by business or individuals for commercial or non-commercial purposes. In general, the term "use" implies this broad spectrum of use and re-use.[618]

The Recommendation sets out principles dealing with the following matters:

- Openness – open access to data and information
- Access and transparent conditions for re-use
- Quality
- Integrity
- New technologies and long-term preservation
- Interoperability – use of international standards
- Copyright – intellectual property – respect of
- Pricing – generally acknowledged that online access be provided at no cost (i.e. marginal

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[615] Ibid, Foreword, p 3.
[616] Ibid.
[617] Ibid, p 4.
[618] Ibid, p 4.

> cost online is essentially no cost)
- Competition
- Redress mechanism
- Public private partnerships
- International access and use
- Best practices

An extract from the text of this OECD Recommendation is set out in Appendix 1.

International scientific collaborations and data sharing

International Council for Science (ICSU)

The International Council for Science,[619] founded in 1931, is a non-governmental organization with a global membership of national scientific bodies (114 members, representing 134 countries) and International Scientific Unions (29 Members). The Council is frequently called upon to speak on behalf of the global scientific community and to act as an advisor in matters ranging from the environment to conduct in science. ICSU's activities focus on three areas: planning and coordinating research; science for policy; and strengthening the universality of science. It is actively involved in promoting freedom of access to scientific data and information, which it advocates through discussion forums, conferences and symposiums.[620]

There are 50 ICSU World Data Centres (WDCs),[621] which operate on the principle of "full and open access to scientific data and products". This does not require that data is available for free, but it must be able to be fully exchanged. Only data which is available on a full and open access basis can be claimed as part of WDC holdings. The ICSU addresses the basic principles and responsibilities for the international exchange of solar, geophysical and environmental data.

Committees or commissions of ICSU are created to organise programs in multi- or trans-disciplinary fields.[622] Australia currently adheres to the ICSU committees on:

- Antarctic Research (SCAR);[623]
- Committee on Data for Science and Technology (CODATA);[624]
- Global Change (IGBP);[625]
- Oceanic Research (SCOR);[626]
- Solar-Terrestrial Physics (SCOSTEP); [627]
- Space Research (COSPAR);[628] and

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[619] See http://www.icsu.org/index.php and http://www.icsu.org/5_abouticsu/INTRO.php. The ICSU was formerly known as the International Council of Scientific Unions.
[620] See http://www.icsu.org/5_abouticsu/INTRO.php.
[621] For more on the World Data Centre system, see http://www.ngdc.noaa.gov/wdc/wdcmain.html.
[622] See the Australian Academy of Science website at http://www.science.org.au/internat/icsu.htm.
[623] See http://www.scar.org/about/.
[624] See http://www.codata.org/.
[625] See http://www.igbp.net/.
[626] See http://www.scor-int.org.
[627] See http://www.scostep.ucar.edu/.
[628] See http://cosparhq.cnes.fr/.

- World Climate Research (WCRP).[629]

"Scientific Data and Information: a Report of the CSPR Assessment Panel", International Council for Science (ICSU) (2004)

In December 2004, ICSU released *Scientific Data and Information: A Report of the CSPR Assessment Panel*, which focused on open access to scientific data.[630] The Report is strongly influenced by the Berlin Declaration, the Bethesda Statement on Open Access Publishing, and the open access endorsements of both the OECD and WSIS.[631] The conceptual basis of the Report was stated as follows:

> Scientific progress relies on full and open access to data and on the open disclosure of research results in the scientific literature. A strong public domain for scientific data and information promotes greater return from the public investment in research by stimulating innovation and more-informed decision making. Principles of open access to scientific data and information can be applied to research data, metadata, or scientific publications, although the specific issues vary with each.[632]

ICSU made several recommendations to promote and strengthen scientific data management:

- financial support for data and information management should be routinely included in research budgets and the criteria for evaluating research funding proposals should include evaluation of data management;[633]

- efforts should be made to raise awareness of the increasingly important role played by institutional repositories in relation to the management and preservation of scientific information and the need to ensure that such repositories are properly resourced, developed and maintained;

- all scientists should receive training in data management as part of their under-graduate and post-graduate education;

- guidelines should be developed for data management by employed scientists and their institutions; and

- collaborative development (involving information technology specialists, librarians, research scientists, government data producers, and donors) of standards and curricula for professional training for scientific data managers should be implemented.[634]

A range of activities need to be coordinated if research data and information are to be effectively

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[629] See http://wcrp.wmo.int/wcrp-index.html.

[630] International Council for Science (ICSU), *Scientific Data and Information: A Report of the CSPR Assessment Panel* (2004) available at http://www.icsu.org/Gestion/img/ICSU_DOC_DOWNLOAD/551_DD_FILE_PAA_Data_and_Information.pdf.

[631] Such international declarations and statements are discussed later in this chapter.

[632] ICSU, *Scientific Data and Information: A Report of the CSPR Assessment Panel* (2004) p 24.

[633] The importance of appropriate funding was also emphasised by the UK Office of Science and Innovation (OSI) e-Infrastructure Working Group in its report *Developing the UK's e-infrastructure for science and innovation*, see http://www.nesc.ac.uk/documents/OSI/report.pdf accessed on 29 May 2009.

[634] ICSU, *Scientific Data and Information: A report of the CSPR Assessment Panel* (2004) p 21.

managed. These include:

- preservation of data and information, so that it will be available in digital formats and on media that can be used in the future;
- use of common metadata standards, to facilitate the identification, re-use and integration of scientific data and to provide information about data quality;
- permanent archiving of scientific data and information and compliance with institutional data archiving obligations where applicable;
- promotion of interoperability between systems and meta data standards to facilitate cooperation and effective use of data and information;
- ensuring data security and integrity;
- compliance with legal requirements, including obligations to protect personal privacy and to maintain confidentiality; and
- **ensuring that intellectual property laws as they relate to scientific data and information recognise the importance of full and open access to data for scientific research and educational purposes.**[635] [emphasis added]

The ICSU Report also specifically considered the role of metadata. It encourages data repositories to ensure that standard metadata is available for all databases and records. The metadata should contain information on the legalities of, and the security and integrity measures employed in, the collection and management of relevant data. Importantly, the report advocates that metadata should be openly and freely accessible to all, through multidisciplinary metadata catalogues.

Committee on Data for Science and Technology (CODATA)

CODATA is an interdisciplinary Scientific Committee of the ICSU which was established in 1966 to promote and encourage, on a world-wide basis, the compilation, evaluation and dissemination of reliable numerical data of importance to science and technology.[636] It works to improve the quality, reliability, management and accessibility of data of importance to all fields of science and technology.

CODATA is concerned with all types of data resulting from experimental measurements, observations and calculations in every field of science and technology, including the physical sciences, biology, geology, astronomy, engineering, environmental science, ecology and others. Particular emphasis is given to data management problems common to different disciplines and to data used outside the field in which they were generated.[637]

CODATA's objectives include:

- the improvement of the quality and accessibility of data, as well as the methods by which data are acquired, managed, analysed and evaluated, with a particular emphasis on developing countries;

- the facilitation of international cooperation among those collecting, organizing and using data;

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[635] ICSU, *Scientific Data and Information: A report of the CSPR Assessment Panel*, (2004) p 9-11.
[636] See http://www.codata.org.
[637] See "CODATA – Who Are We?", webpage, at http://www.codata.org/about/who.html.

- the promotion of an increased awareness in the scientific and technical community of the importance of these activities;

- the consideration of data access and intellectual property issues.[638]

CODATA has produced a number of publications, including the Data Science Journal. The June 2007 issue of the journal focused on open data issues.

Group on Earth Observations (GEO) and the Global Earth Observation System of Systems (GEOSS)

An important new initiative for cooperation and knowledge-sharing in geospatial information is the Group on Earth Observations (GEO) and its work coordinating international efforts to establish a Global Earth Observation System of Systems (GEOSS). The vision for GEOSS is as a "system of systems", built upon existing observational systems and incorporating new systems for Earth observation and modelling that are offered as GEOSS components by Member countries and Participating Organizations. This emerging public infrastructure links a diverse and growing array of instruments and systems for monitoring and forecasting changes in the global environment. This "system of systems" supports policymakers, resource managers, science researchers and many other experts and decision-makers.

The operational coordination and harmonisation of data policies and procedures, to facilitate the sharing and use of GEOSS data to maximise societal benefits for the widest possible range of users, is a major challenge of no less significance than developing technical interoperability between the diverse and increasing array of monitoring and forecasting systems and instruments. Some instances of the challenges presented to the GEOSS by inappropriate policies are described in the *White Paper and Implementation Guidelines for the GEOSS Data Sharing Principles*:

> Inconsistent or vague data policies and procedures could hamper the rapid dissemination and flexible use of data and information needed for mission-critical and /or life-threatening GEOSS applications. Restrictive policies on data re-use and re-dissemination would significantly reduce the net return on investment of public funds in Earth observations and lead to unnecessary and wasteful duplication of effort. Excessive charges for data would pose substantial barriers to many users, especially those in developing countries, who may have no or few alternative sources for data.[639]

A major early achievement of the Group on Earth Observations (GEO) was reaching agreement in 2005 on a strategic set of Data Sharing Principles which represent an essential basis for the Global Earth Observation System of Systems (GEOSS).

The *GEOSS 10 Year Implementation Plan* (adopted 16 February 2005)[640] explicitly acknowledged the importance of data sharing in achieving the GEOSS vision and anticipated societal benefits. The Plan, endorsed by nearly 60 countries and the European Commission at the Third Earth Observation

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[638] Ibid.

[639] White Paper on the GEOSS Data Sharing Principles (Review Draft) September 2008 (CODATA, Paris) pp 5-6, available   at http://www.earthobservations.org/documents/dsp/Draft%20White%20Paper%20for%20GEOSS%20Data%20Sharing%20Policies_27Sept08.pdf accessed on 29 May 2009.

[640] See http://www.earthobservations.org/docs/10-Year%20Implementation%20Plan.pdf

Summit in Brussels, acknowledged the importance of data access and need for principles governing data sharing[641]:

> **5.3:**
> …To enable implementation of the GEOSS architecture, GEOSS will draw on existing Spatial Data Infrastructure (SDI) components as institutional and technical precedents in areas such as geodetic reference frames, common geographic data, and standard protocols. GEO Members and Participating Organizations and their contributions will be catalogued in a publicly accessible, network-distributed clearinghouse maintained collectively under GEOSS. The catalogue will itself be subject to GEOSS interoperability specifications, including the standard search service and geospatial services.

> **5.4 Data Sharing**
> The societal benefits of Earth observations cannot be achieved without data sharing.
>
> The following are GEOSS data sharing principles:
>
> 1. There will be full and open exchange of data, metadata and products shared within GEOSS, recognising relevant international instruments, and national policies and legislation.
>
> 2. All shared data, metadata and products will be made available with minimum time delay and at minimum cost.
>
> 3. All shared data, metadata and products being free of charge or at no more than the cost of reproduction will be encouraged for research and education.[642]

GEO has as one of its major ongoing undertakings the implementation of these high level principles.[643] The ongoing implementation work is explained on GEO's website:

> As part of the implementation of GEOSS, a team of experts has worked on the GEO Work Plan Task on GEOSS Data Sharing Principles DA-06-01 under the leadership of the Committee on Data for Science and Technology (CODATA) of the International Council for Science (ICSU).[644] Over the past two years, the team has drafted a White Paper that provides an overview of international data sharing laws, principles, and policies and recommends a draft set of implementation guidelines for the GEOSS Data Sharing Principles as outlined in the GEOSS 10-Year Implementation Plan. The White Paper builds upon a diverse history of data sharing practices to forge a set of specific guidelines for data sharing—consistent with the accepted Data Sharing Principles—that should enable GEOSS to maximize its societal benefits and realize its potential.

> Following the successful initiation and progress of the Task, in November 2007, the Fourth Earth Observation requested that a process be put in place to further the establishment of detailed GEOSS data sharing guidelines leading up to their implementation. This document is not intended as a legal framework, but rather as a common basis for community discussion on how to share the data and information contributed to GEOSS.

> It is important that all GEO Members and Participating Organizations contribute their respective expertise and vision for data sharing to this document. Only in this way can we be sure to establish a set of guidelines that are acceptable to all contributors to GEOSS.

> The process for arriving at such a consolidated and detailed set of GEOSS Data Sharing Principles will be an evolving one. Over the coming two years, the Task Team, with support from the GEO Secretariat, aims to have these Guidelines further defined, thoroughly assessed and therefore mature for implementation by Members and Participating Organizations at the time of the GEO Ministerial in 2010. As next milestone, it is foreseen to

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[641] At pp 7-8
[642] Ibid, page 4.
[643] See http://www.earthobservations.org/geoss_dsp.shtml.
[644] CODATA page on GEOSS at http://www.codata.org/GEOSS/index.html.

present the White Paper to the 5th GEO Plenary meeting in Beijing in November 2008 for discussion.
The schedule for GEO approval of the GEOSS Data Sharing Guidelines is as follows:

- November 2008: Discussion of the draft guidelines at GEO-V Plenary. Submission of the Process Paper to the GEO community.
- November 2008-June 2009: Additional revisions to the draft guidelines. Assessment of the potential impact of the Data Sharing Guidelines on Members' and Participating Organization's current national data policies. Discussion and consensus-building activities to clarify to what degree value-added data and services contributed to GEOSS (e.g., model outputs, data processing to higher levels for application/analysis/decision making) are subject to the Data Sharing Principles. Discussion of possible additions to the guidelines.
- November 2009: Discussion of the draft guidelines at GEO-VI Plenary. Reports by GEO Members and Participating Organizations on their national data policies in relationship to the proposed guidelines and associated implementation issues and plans.
- Mid-2009 to Mid-2010: Additional revisions to the draft guidelines. Identification and implementation of specific actions and plans to improve consistency with the principles.
- November 2010: Guidelines considered for adoption at GEO-VII and Ministerial Summit. [645]

Open access statements and declarations

Beijing Declaration (2008)

At the XXIst Congress of the International Society for Photogrammetry and Remote Sensing (ISPRS) in July 2008, the General Assembly of ISPRS made the Beijing Declaration[646] which calls on international communities to work together and commit adequate resources for the benefit of society and the environment. The Declaration affirms the importance of photogrammetry, remote sensing and spatial information sciences for sustainable development and draws attention to the application of Earth observation technologies in a range of fields including socio-economic sustainable development, management of natural disasters, conservation of cultural heritage, sustainable use of water resources, and environment and health.

The text of the declaration is:

Beijing Declaration
(Approved on July 9th, 2008)

We, members of The International Society for Photogrammetry and Remote Sensing (ISPRS) and participants of the XXIst ISPRS Congress in Beijing, recognize the importance of imagery to measure and monitor the natural and man-made features on planet Earth and to explore other planets of the solar system, especially after witnessing the important role of photogrammetry, remote sensing and spatial information systems in the rescue operation and damage assessment of the recent devastating natural disasters.

We note scientific developments reported during the technical sessions of the Congress and the great progress made in the use of imagery from many different platforms, with numerous sensors, for a wide variety of applications. We particularly note:

1. Wide applications of Earth observation technologies and tools to the fields of socioeconomic sustainable development, natural disaster prediction, mitigation and response, maintenance of biodiversity, cultural heritage conservation, global and environmental climate change monitoring,

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[645] See http://www.earthobservations.org/geoss_dsp.shtml.
[646] See http://www.icsu.org/Gestion/img/ICSU_DOC_DOWNLOAD/2124_DD_FILE_ISPRS_Beijing_Declaration.pdf.

energy exploration and management, land use and land cover inventory, food security, sustainable use of water resources, and human habitat, environment and health.

2. Significant technological achievement in the acquisition, processing, interpretation and analysis of aerial and satellite imagery, advances of airborne and terrestrial lidar, development of imaging radar technology, increased maturity of small satellites and of geo-sensor networks, validation, calibration and certification of digital cameras and other types of sensors, automated information extraction from all forms of imagery, distributed data processing for information services, and multidimensional data modeling.

3. Great progress in developing new forms of cooperation and knowledge sharing, including the Group on Earth Observation (GEO) and its program to establish a Global Earth Observation System of Systems (GEOSS), and the International Council for Science (ICSU) Geo-unions and its activities in Africa, and the Joint Board of Geospatial Information Societies.

Recalling that the 2002 World Summit for Sustainable Development (WSSD) stressed the importance of Earth observation for advancing sustainable development, we strongly believe that photogrammetry, remote sensing and spatial information sciences are essential to ensure sustainable development in the 21st century. We further recognize that non-governmental organizations, especially ISPRS, have the responsibility to promote the peaceful use of space, airborne and terrestrial technology and the realization of the full potential of imagery for the benefit of society and for the maintenance of sustainable growth in all nations.

We reaffirm our commitment to implement the vision for the 21st century of ISPRS, which aims to realize the full potential of information from imagery by encouraging and facilitating research and development, advancing knowledge by scientific networking, promoting international cooperation, pursuing inter-disciplinary integration, facilitating education and training, enhancing and exploring new applications, developing public recognition of photogrammetry, remote sensing and the spatial information sciences. We therefore call on international communities to support the **Cape Town declaration of GEO** and:

1. to commit adequate investment and active engagement in scientific research and development, education and training, and capacity and infrastructure building;

2. to promote the sharing of imaging and ranging technology and data for scientific research and peaceful applications; and

3. to encourage constructive dialogue and close cooperation and collaboration between scientists, governments, public and private sectors, non-governmental organizations, and international organizations and institutions.

We further call for a contribution from everyone to establish and operate a new silk road for information from imagery, leading to a people-centered and sustainable development-oriented information society.[647] [emphasis added]

Other international organisations and initiatives

Consultative Group on International Agriculture Research (CGIAR) and International Maize and Wheat Improvement Centre (CIMMYT)

CIMMYT is an internationally funded, non-profit, scientific research and training organization. The CGIAR Consortium for Spatial Information (CSI)[648] evolved from a collaboration among CGIAR centres and GRID-Arendal with the objective of promoting effective use of GIS in international

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[647] Ibid.
[648] See http://www.spatial-info.org.

agricultural development. CSI creates mechanisms for standardizing datasets within CGIAR, sharing methodologies and solutions, and facilitating inter-centre collaboration. CSI serves as a platform for joint efforts in GIS-based agricultural research at global, regional, and local levels. Core membership includes 10 institutions. The CGIAR Central Advisory Service (CAS) on Intellectual Property[649] was established by CGIAR in 1999 to facilitate the exchange of experiences and knowledge among the CGIAR Centres and to provide expert assistance on intellectual property matters.

"Legal Issues in the Use of Geo-spatial Data and Tools for Agriculture and Natural Resource Management: A Primer", Roger A. Longhorn, Victoria Henson-Apollonio, and Jeffrey W. White (2002)

In activities of the GIS and Modelling Laboratory at CIMMYT, one of the authors (Jeff White) noted an increasing expectation among partner institutions that data exchanges would be accompanied by transfer agreements. Similarly, in collaborative efforts and contracted work, questions arose concerning ownership of software code and permitted use of commercial tools. In addressing these concerns, the opportunity arose for CGIAR's then newly-established Central Advisory Service to assist CIMMYT in reviewing intellectual property issues relating to use of spatial information. Recognizing that such a review might interest a broad audience of researchers, development specialists and managers, the review was conducted under the aegis of CGIAR's Consortium for Spatial Information.

This primer is one of the most practical guides of its kind.[650] It provides an overview of intellectual property issues relating to GIS from an agricultural and natural resource management point of view. While dealing with a range of intellectual property issues at a basic level, it also contains many industry-specific examples (such as recent, at time of publication, patents relating to GIS).

Open Geospatial Consortium (OGC)

The Open Geospatial Consortium, Inc (OGC) is an international industry consortium of over 360 companies, government agencies, non-profit and research organizations, including universities, participating in a consensus process to develop publicly available interface specifications.[651] OGC members collaboratively develop OpenGIS standards and specifications to address specific interoperability challenges. The OpenGIS standards and specifications, which are available at no cost, are technical documents that detail interfaces or encodings. Software developers use these documents to build support for the interfaces or encodings into their products and services.

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[649] See http://www.cgiar.org/isnar/cas/.

[650] See http://209.85.173.132/search?q=cache:kMv8NLamt3QJ:csi.cgiar.org/download/IPR_Primer.pdf+Legal+Issues+in+the+Use+of+Geo-spatial+Data+and+Tools+for+Agriculture+and+Natural+Resource+Management:+A+Primer+Longhorn+%222002%22&hl=en&ct=clnk&cd=1&gl=au.

[651] See http://www.opengeospatial.org/ogc accessed on 15 December 2008.

Literature on SDI initiatives

With the development of the internet and advances in information technology since the mid-1990s, it has become increasingly important to adopt an international and global approach towards spatial information. Spatial data infrastructures are being developed in over 100 countries[652], as distributed networks using the internet and geomatics to enable the sharing of interoperable spatially correlated data. Work in the US to develop a National Spatial Data Infrastructure has carried through into thinking about and work on the Global Spatial Data Infrastructure (GSDI).[653] The US Federal Geographic Data Committee (FGDC)[654] is encouraged (under OMB Circular A-16) to participate in building the GSDI as well as developing the US NSDI.[655]

There is an extensive body of literature which examines SDI initiatives from an international and comparative approach.[656]

"Research and Theory in Advancing Spatial Data Infrastructure Concepts", Harlan J. Onsrud (2007)

This scholarly volume on spatial data infrastructure (SDI)[657] edited by Harlan J Onsrud (past president of the Global Spatial Data Infrastructure Association), presents current research by international experts and provides insights into possible future directions for SDIs. The studies

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[652] For a listing of SDI initiatives around the world, see http://www.spatial.maine.edu/~onsrud/GSDI.htm.

[653] See http://www.gsdi.org/.

[654] The FGDC is responsible for the US National Spatial Data Infrastructure (NSDI).

[655] See http://www.fgdc.gov/international/find_world_data.

[656] See, for example, the work of Ian Masser (http://www.geom.unimelb.edu.au/people/imasser.html): *An International Overview of Geo-spatial Information Infrastructures: Lessons to be Learnt for the NGDF*, Version 1, July 1998; *All shapes and sizes: the first generation of National Spatial Data Infrastructures*, Int. J. Geographical Information Science 13, 67-84, 1999; *The Indian National Geospatial Data Infrastructure,* GIM International, Vol. 15, No. 8, August 2001; *A comparative analysis of NSDIs in Australia, Canada and the United States*, GINIE: Geographic Information Network in Europe, October 2002; *GIS Worlds: Creating Spatial Data Infrastructures,* ESRI Press, 2005; *Multi-level Implementation of SDIs – Emerging Trends and Key Strategic Issues,* GIM International, Vol. 20, Issue 2, February 2006 available at http://www.gim-international.com/issues/articles/id614-Multilevel_Implementation_of_SDIs.html; *Governments and Geographic Information*, Taylor and Francis, 2007; *Building European Spatial Data Infrastructures*, ESRI Press, 2007. See also D Rhind, *Lessons learned from local, National and Global Spatial Data Infrastructures,* GISdevelopment.net, 2001, available at http://www.gisdevelopment.net/policy/gii/gii0006.htm; A Rajabifard, M Feeney, I Williamson and I Masser, *National spatial data infrastructures,* in I Williamson, A Rajabifard and M Feeney (eds), *Development of Spatial Data Infrastructures: from Concept to Reality,* Taylor and Francis, 2003; I Masser, A Rajabifard and I Williamson, *Spatially Enabling Governments through SDI Implementation,* International Journal of Geographic Information Science, Vol. 21, July 2007; A Rajabifard and I Williamson, *Regional SDI Development,* Journal of Geospatial Today, Vol. 2, Issue 5, Jan-Feb 2004, available at http://www.geom.unimelb.edu.au/research/SDI_research/publications/files/India2004.pdf; A Rajabifard, A Binns, I Masser and I Williamson, *The role of sub-national government and the private sector in future Spatial Data Infrastructures,* International Journal of GIS, Vol. 20, No. 7, 2006; A Rajabifard and I Williamson, *SDI Development and Capacity Building,* Proceedings of the 7th GSDI Conference, February 2004, Bangalore, India, available at http://www.geom.unimelb.edu.au/research/SDI_research/publications/files/SDI_CB_India2004.pdf ; A Rajabifard and I Williamson, *Asia-Pacific Region and SDI Activities,* Journal of GIS Development, Vol. 7, Issue 7, July 2003, available at http://www.geom.unimelb.edu.au/research/publications/IPW/Journal%20of%20GIS%20Development-June2003.pdf.

[657] Harlan J Onsrud, *Research and Theory in Advancing Spatial Data Infrastructure Concepts*, ESRI Press, Redlands, 2007, available at http://gis.esri.com/esripress/display/index.cfm?fuseaction=display&moduleid=0&websiteid=122 (ISBN: 978-1-58948-162-6).

address technical, legal, economic, and institutional issues, with a strong focus on the needs of developing nations. The research analyses models for planning, financing, and implementing SDI initiatives and assesses the extent to which established SDI projects in Australia, India, and the European Union are contributing to national economic competitiveness and social well-being.

Chapter 4: Europe and United Kingdom

Europe

Some of the most significant initiatives in relation to access to information generated by public sector entities are those developed by the European Union (EU), in the form of Directives for implementation by EU Member States. Primary among these are the Directive on the re-use of public sector information (Directive 2003/98/EC)[658] ("the PSI Directive") which was adopted by the European Parliament and Council on 17 November 2003 and the Directive establishing an Infrastructure for Spatial Information (Directive 2007/2/EC)[659] ("the INSPIRE Directive") which was adopted by the European Parliament and Council on 14 March 2007.[660] The European Parliament and the Council on 28 January 2003 adopted the Directive on Public Access to Environmental Information (Directive 2003/4/EC)[661] which obliges public authorities to provide timely access to environmental information.

European policy and practice in relation to public sector information (PSI) must be considered in the context of a legal framework that includes the EU Treaty (Articles 81 and 82) and EU Directives on Data Privacy (Directive 95/46/EC & 2002/77/EC); Database protection (Directive 96/9/EC); Intellectual Property Rights (Directive 2004/48/EC); Transparency of Public Undertakings (Directive 2006/111/EC); and Public Procurement (Directives 93/8/EEC and 98/4/EC and 2004/17/EC, 93/87/EEC & 97/52/EC & 2004/18/EC). As well as these Directives, there are a number of Communications of the European Commission that address issues relevant to open access in relation to a broad range of information types including scientific and creative materials online. In the field of scientific information, on 14 February 2007, the European Commission published its Communication on scientific information in the digital age: access, dissemination and preservation.[662]

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[658] Directive 2003/98/EC of the European Parliament and of the Council of 17 November 2003 on the re-use of the public sector information [2003] OJ L 345/90, available at http://www.epsiplatform.com/reports/european_directive_on_psi/directive_2003_98_ec and http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32003L0098:EN:HTML accessed on 22 May 2009.

[659] Directive 2007/2/EC of the European Parliament and the Council of 14 March 2007 establishing an Infrastructure for Spatial Information [2007] OJ L 108/1, 25 April 2007. The INSPIRE Directive entered into force on 15 May 2007, available at http://www.ec-gis.org/inspire/directive/l_10820070425en00010014.pdf and http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2007:108:0001:01:EN:HTML accessed on 22 May 2009.

[660] The INSPIRE Directive entered into force on 15 May 2007.

[661] Directive 2003/4/EC of The European Parliament And Of The Council Of 28 January 2003 On Public Access To Environmental Information And Repealing Council Directive 90/313/EEC OJL 041 , 14/02/2003 P. 0026 – 0032, available at http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32003L0004:EN:HTML accessed on 22 May 2009.

[662] Communication from the Commission to the European Parliament, the Council, and the European Economic and Social Committee on scientific information in the digital age: access, dissemination and preservation, COM(2007) 56 final, available at http://ec.europa.eu/research/science-society/document_library/pdf_06/communication-022007_en.pdf accessed 22 May 2009.

As was noted at the final ePSI*plus* thematic meeting in Paris in February 2009:

> The move to the concept of data sharing is gaining momentum within Europe and is appearing in the context of the INSPIRE Directive,[663] the Shared Environmental Information System (SEIS)[664] and the Marine Observation and Data Expert Group (MODEG)[665] for example.[666]

Certain key and frequently encountered issues emerge from the various European initiatives and the varied informational contexts and subject matters which they address. The key issues include the benefits to be derived from technological (ICT) compatibility and interoperability (with the related need for readily accessible innovative ICT tools to facilitate these objectives e.g. open source software and open ICT systems), the need for clearly articulated information management policies and principles, the economics of open access to PSI, and the need for cross border legal compatibility such as widely accepted and clearly expressed standard open content licences which indicate clearly what uses may be made of the information being accessed online and on an open access basis.

The European Organisation for Nuclear Research (CERN)

The European Organisation for Nuclear Research (CERN) is an early and outstanding example of co-operation at the international level in providing access to, and making scientific research results "generally available".[667] The CERN Convention, established in July 1953, in the aftermath of the Second World War, was ratified by the 12 founding Member States: Belgium, Denmark, France, the Federal Republic of Germany, Greece, Italy, the Netherlands, Norway, Sweden, Switzerland, the United Kingdom, and Yugoslavia. CERN was officially established on 29 September 1954, following ratification by France and Germany.

The CERN Convention states:

> "The Organization shall provide for collaboration among European States in nuclear research of a pure scientific and fundamental character (...). The Organization shall have no concern with work for military requirements and **the results of its experimental and theoretical work shall be published or otherwise made generally available**".[668] [emphasis added]

The Convention also establishes CERN's role in organising and sponsoring international co-operation in research, promoting contacts between scientists and interchange with other laboratories and institutes. This includes dissemination of information, and the provision of advanced training for research workers, which continue to be reflected in the current program for technology transfer and education and training at many levels. A key goal is to bring nations together through science.[669]

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[663] See http://inspire.jrc.ec.europa.eu/ accessed on 22 May 2009.
[664] See http://ec.europa.eu/environment/seis/index.htm accessed on 22 May 2009.
[665] See http://www.epsiplus.net/news/a_brake_on_innovation accessed on 22 May 2009.
[666] *Report: Final ePSIplus Thematic Meeting,* 3 February 2009, Paris, p 3, available at http://www.epsiplus.net/reports/epsiplus_thematic_meeting_reports/epsiplus_final_thematic_meeting_report accessed on 22 May 2009.
[667] See http://public.web.cern.ch/public/en/About/About-en.html accessed 22 May 2009.
[668] See http://public.web.cern.ch/public/en/About/Mission-en.html accessed 22 May 2009.
[669] The CERN Council is the highest authority of the Organization and has responsibility for all-important decisions. CERN is run by 20 European Member States, each of which has two official delegates to the CERN Council. One

CERN connects and combines the IT power of more than 140 computer centres in 33 countries. At full capacity, the Large Hadron Collider (LHC), the world's largest particle accelerator, is expected to produce more than 15 million Gigabytes of data each year. Hundreds of millions of subatomic particles will collide each second, presenting a massive data challenge.

The mission of the Worldwide LHC Computing Grid (WLCG) is to build and maintain the data storage and analysis infrastructure for this immense flow of data, thus helping physicists open new frontiers in our understanding of the Universe.

CERN also collaborates with institutional partners around the globe. For example, it coordinates the European Union-funded Enabling Grids for E-sciencE (EGEE) project, which involves 70 institutional partners in Europe, the US and Russia. EGEE aims to provide a production Grid infrastructure for all sciences. Already, over 20 applications from scientific domains including Earth observation, climate prediction, petroleum exploration and drug discovery are running on this infrastructure. CERN has also pioneered a novel form of industrial partnership, the CERN openlab, with partners Enterasys, HP, IBM, Intel and Oracle, which is testing and validating new hardware and software solutions from the partners in CERN's advanced Grid environment.[670]

"Public Sector Information: A Key Resource for Europe", European Commission Green Paper on Public Sector Information in the Information Society (1999)

The *Green Paper on Public Sector Information in the Information Society*[671] was produced by the European Commission's Directorate General (DG) XIII/E-1 in 1998 (adopted in January 1999), in response to European Commission investigation into the development of the information economy and information society. The objectives of the Green Paper were stated to be:

> [T]o undertake a broad public consultation involving all the actors concerned with a view to examining the main issues at stake and also to triggering a political discussion at European level. The Green Paper draws on the results of an extensive preliminary consultation process that started in June 1996 and has involved representatives from the Member States, from citizens' and users' groups and from the private sector and more specifically the information industry. All those consulted considered it appropriate to launch a debate on this issue.[672]

Chapter III of the Green Paper considers a range of issues relating to access to and exploitation of PSI and sets out 10 questions on which feedback was sought from all interested parties from both public and private sectors (by 1 June 1999).[673] As well as tools for facilitating access, pricing and

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represents his or her government's administration; the other represents national scientific interests. Each Member State has a single vote and most decisions require a simple majority, although in practice the Council aims for a consensus as close as possible to unanimity.

[670] See http://press.web.cern.ch/press/PressReleases/Releases2005/PR15.05E.html accessed on 22 May 2009.

[671] European Commission, Directorate General (DG) XIII/E-1, *Green Paper on Public Sector Information in the Information Society*, COM 1998(585) final, 20 January 1999, available at ftp://ftp.cordis.europa.eu/pub/econtent/docs/gp_en.pdf, http://cordis.europa.eu/econtent/publicsector/gp-index.html and http://aei.pitt.edu/1168/ accessed on 22 May 2009.

[672] Ibid, p 1, paragraph [8] at ftp://ftp.cordis.europa.eu/pub/econtent/docs/gp_en.pdf and http://cordis.europa.eu/econtent/publicsector/gp-intro.html#intro accessed 22 May 2009.

[673] The full list of 10 questions is available at http://cordis.europa.eu/econtent/publicsector/gp-conclusion.html#quest

competition issues, the Green Paper raised a number of legal issues, including copyright, privacy and liability. Of particular relevance is the commentary on copyright and liability issues and the associated questions for consideration:

III.6 Copyright issues
The Berne Convention (Art. 2 (4)) leaves Member States the freedom to determine the protection to be granted to official texts of a legislative, administrative or legal nature, and their official translations.

The vast majority of Member States have used this provision to exclude these texts from any copyright protection. As to information of a different nature produced by the public sector, most Member States have extended the previous exclusion also to this information material. However, the extent to which copyright is granted to these materials does not limit in itself access by the public to the information.

The public sector has two main reasons to protect its information. In the first place it may be a source of income. This may pose however questions in the field of competition. It may create market distortions between companies in the different Member States that want to reuse the information.

Another reason for public sector bodies protecting their information could be the wish to maintain the integrity of the content. This is relevant in the perspective of liability questions.

Question 6:
Do different copyright regimes within Europe represent barriers for the exploitation of public sector information?
...

III.8 Liability issues
Clarity as to the liability issues may have a positive impact on access to and the exploitation of public sector information. In fact, liability may be a reason for the public sector to operate a prudent information policy. If the public body provides information to a requester directly it could, in principle, be liable (in accordance with national liability laws) for any damages caused to the citizen concerned.

The issue becomes more complex when more than two parties (public body, requester) are involved in the processing and dissemination of information. This is the case, for example, when the public sector has ceded the information to a private company. In that case, public bodies could still be liable for the information provided, unless they have limited this liability by contract.

The more actors are involved, the more difficult it becomes, in cases of conflict, to identify the one who has defaulted or acted unlawfully. Some commentators believe that coordinated European approaches to this issue are particularly important in view of the difficulty of establishing which national law applies in cases involving several countries.

Question 8:
To what extent may the different Member States' liability regimes represent an obstacle to access or exploitation of public sector information?[674]

Annexe 2 to the Green Paper overviews steps that had been taken in the European Union (EU) in relation to the accessibility of PSI, and provides a useful background to the Green Paper.[675] Annexe 2 states:

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accessed on 22 May 2009.
[674] European Commission, Directorate General (DG) XIII/E-1, *Green Paper on Public Sector Information in the Information Society*, COM 1998(585) final, 20 January 1999, pp 15-16, paragraphs [106]-[109], [115]-[117], available at ftp://ftp.cordis.europa.eu/pub/econtent/docs/gp_en.pdf, http://cordis.europa.eu/econtent/publicsector/gp-chapter3.html#iii2 and http://aei.pitt.edu/1168/ accessed on 22 May 2009.
[675]   Available at http://cordis.europa.eu/econtent/publicsector/gp-annex.html#a3 accessed on 22 May 2009.

1. Some Milestones

In September 1996, in its resolution on the Commission's Action Plan for the Information Society, the European Parliament requested that new forms of electronic distribution be exploited for the dissemination of public information to all citizens at European and national level.

In October 1996, in its resolution on new policy priorities in the information society, the Industry Council urged Member States to improve access to public information, through the accelerated use of information society tools and partnerships between the public and private sector.

Access to public sector information has been one of the priority issues addressed by the ministerial declaration issued at the conference on Global Information Networks, which took place in Bonn on 6-8 July 1997.

Non-governmental actors have also been encouraging action in this area. A strong request for an access to public information initiative has recently been made by the Information Society Forum (Vienna Declaration of 13-11-1998).

In addition, mention should be made of initiatives that are being undertaken in other international bodies, for instance, the activities of the Council of Europe.
...

4. Background initiatives to the Green Paper

The potential importance of public sector information as a resource first attracted the Commission's attention in the mid 1980s, when, in the context of the IMPACT programme for creating a Community information market and in response to a need perceived by the information industry, it started a consultation process with public and private sector information providers' and users' representatives. In addition, studies were carried out with respect to these issues. Furthermore, the Commission organised a number of preparatory discussions with the help of the Legal Advisory Board (for more information see the LAB Home Page on the European Commission WWW server I*M EUROPE at the address: http://www2.echo.lu/legal/en/labhome.html).

These initiatives resulted in a set of 19 guidelines for 'Improving the Synergy between the Public and Private Sectors in the Information Market'. However, subsequent studies proved that the impact of these guidelines was rather disappointing. In most Member States the guidelines seem to have had little, if any, impact.

The Commission organised a meeting in Stockholm on June 27 and 28, 1996, at which a large number of participants discussed various issues related to this Green Paper. Participants expressed their consensus on the actions undertaken so far (the proceedings are available on request).

The first legislative initiative in this area was the adoption of Directive 90/313/EEC of 23 June 1990 on the freedom of access to information on the environment, providing all legal and natural persons with a right of access to information concerning the environment held by public authorities. Further actions have been taken by the EU in the environment field. In particular the work done by the European Environment Agency should be recalled in that respect. Furthermore, on 25 June 1998, the Presidency of the Council and the Commission have signed the UN/ECE Convention on access to information, public participation in decision-making and access to justice in environmental matters.[676]

Annexes 1 and 3 provide an overview of the legal framework for access to PSI in the EU Member States at that time,[677] as well as the position in the United States.[678]

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[676] Ibid.

[677] Annexe I provides an overview of the legislation and policy then in force supporting access to public sector information in all the EU Member States at that time. Summaries are provided of the situations in Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden and the United Kingdom. See http://cordis.europa.eu/econtent/publicsector/gp-annex.html#a1 accessed on 22 May 2009.

[678] See http://cordis.europa.eu/econtent/publicsector/gp-annex.html#a3 accessed on 22 May 2009.

"Directive on the re-use of public sector information", European Parliament and Council (2003) ("the PSI Directive")

The *Directive on the re-use of public sector information*[679] ("the PSI Directive") represents the culmination of efforts that commenced in the late 1980s with the objective of promoting the development of a European data products industry based on PSI.[680]

A historical account of the events, policies and documents forming the background to the PSI Directive is provided by Janssen and Dumortier in *Towards a European Framework for the Re-use of Public Sector Information: A long and winding road* (2003).[681] This article considers the 1989 Synergy Guidelines, the Publaw Reports and The Green Paper on Public Sector Information in the Information Society.[682] Economic arguments supporting the commercialisation of European PSI are found in the 2000 report by PIRA International, *Commercial exploitation of Europe's public sector information: Final Report for the European Commission Directorate General for the Information Society* (the PIRA Report).[683]

The European Parliament and Council of the European Union recognised that the public sector is the largest single producer of information in Europe and that substantial social and economic benefits stood to be gained if this information were available for access and re-use. However, European content firms engaging in the aggregation of information resources into value-added information products would be at a competitive disadvantage to their US counterparts if they did not have clear policies or uniform practices to guide them in relation to access to and re-use of PSI.[684] The lack of harmonisation of policies and practices regarding PSI resources among the EU Member States was regarded as a barrier to the development of digital products and services based on information obtained from different countries.[685] It was in this context that PSI Directive was negotiated. The Directive establishes a framework of rules governing the re-use of existing

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[679] Directive 2003/98/EC of the European Parliament and of the Council of 17 November 2003 on the re-use of the public sector information [2003] OJ L 345/90 http://www.epsiplatform.com/reports/european_directive_on_psi/directive_2003_98_ec and http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32003L0098:EN:HTML accessed on 22 May 2008.

[680] See, in particular the Commission of the European Communities' *Guidelines for Improving the Synergy Between the Public and Private Sectors in the Information Market* (1989) available at http://cordis.europa.eu/econtent/psi/psi_green_intro.htm accessed on 22 May 2008. The agenda appears to have been reinvigorated by a major policy conference on public sector information, sponsored by the European Commission (Stockholm, 1996).

[681] Katleen Janssen and Jos Dumortier, 'Towards a European Framework for the Re-use of Public Sector Information: A long and winding road' (2003) 11(2) *International Journal of Law and Information Technology* 184, Oxford University Press, pp 184-201, available at http://ijlit.oxfordjournals.org/cgi/content/abstract/11/2/184 accessed on 22 May 2009.

[682] Ibid.

[683] PIRA International (2000) *Commercial exploitation of Europe's public sector information: Final Report for the European Commission Directorate General for the Information Society*, Commission of the European Communities, 30 October 2000, available at ftp://ftp.cordis.lu/pub/econtent/docs/commercial_final_report.pdf accessed on 22 May 2008.

[684] See Katleen Janssen and Jos Dumortier, 'Towards a European Framework for the Re-use of Public Sector Information: A long and winding road' (2003) 11(2) *International Journal of Law and Information Technology* 184, Oxford University Press, pp 184-201, available at http://ijlit.oxfordjournals.org/cgi/content/abstract/11/2/184 accessed on 22 May 2009; and PIRA International (2000) *Commercial exploitation of Europe's public sector information: Final Report for the European Commission Directorate General for the Information Society*, Commission of the European Communities, 30 October 2000, available at ftp://ftp.cordis.lu/pub/econtent/docs/commercial_final_report.pdf accessed on 22 May 2008.

[685] Problems were identified with response times to requests for information, pricing, existing exclusive deals and the overall lack of transparency.

documents held by the public sector bodies of EU member states.[686]

All EU member states were required to incorporate the measures set out in the PSI Directive into their national laws by 1 July 2005,[687] and to review the application of the Directive by 1 July 2008.[688] Only four EU Member States met the 1 July 2005 deadline and at the end 2005, 12 countries (including France, Ireland, Italy, Sweden, the Netherlands and the United Kingdom) had notified the European Commission that they had given effect to the Directive.[689] By the time the Council published its review of the PSI Directive's implementation in May 2009, it had been transposed in all EU Member States.[690]

In the UK, the Directive has been given effect by the *Re-use of Public Sector Information Regulations 2005*,[691] which came into force on 1 July 2005. In May 2005, the UK government established an Office of Public Sector Information (OPSI) with responsibility for the coordination of policy standards on the re-use of PSI.[692]

The principles set out in the PSI Directive can be summarised as follows:

- where re-use of public sector documents is permitted, the documents will be re-usable for commercial or non-commercial purposes (in accordance with the conditions in Articles 5 – 11) and, where possible, will be made available through electronic means;[693]

- public sector bodies are - through electronic means where possible and appropriate - to process requests for re-use and make documents available for re-use to applicants or, if a licence is needed, to finalise the licence offer to the applicant within a reasonable time;[694]

- public sector bodies shall make documents available in any pre-existing format or language,

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[686] See Directive 2003/98/EC of the European Parliament and of the Council of 17 November 2003 on the re-use of the public sector information [2003] OJ L 345/90, available at http://www.epsiplatform.com/reports/european_directive_on_psi/directive_2003_98_ec and http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32003L0098:EN:HTML accessed on 22 May 2009. Note that 'public sector body' is defined in Article 2 as "the State, regional or local authorities, bodies governed by public law and associations formed by one or several such authorities or one or several such bodies governed by public law".

[687] Article 12.1.

[688] Article 13.

[689] See "Implementation of the PSI Directive" webpage at http://ec.europa.eu/information_society/policy/psi/actions_ms/implementation/index_en.htm accessed on 22 May 2009.

[690] Commission of the European Communities, *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Re-use of Public Sector Information – Review of Directive 2003/98/EC – [SEC(2009) 597]* at http://ec.europa.eu/information_society/policy/psi/docs/pdfs/directive/com09_212/com09_212_en.pdf accessed on 25 May 2009.

[691] Statutory Instrument 1515 of 2005, available at http://www.opsi.gov.uk/si/si2005/20051515.htm accessed on 22 May 2009.

[692] See the Office of Public Sector Information's website at http://www.opsi.gov.uk/. The Office of Public Sector Information (OPSI), attached to the Cabinet Office, advises on and regulates the operation of the re-use of public sector information, and sets standards and provides a practical framework to increase transparency and remove obstacles to re-use.

[693] Article 3 of Directive 2003/98/EC of the European Parliament and of the Council of 17 November 2003 on the re-use of the public sector information [2003] OJ L 345/90, available at http://www.epsiplatform.com/reports/european_directive_on_psi/directive_2003_98_ec and http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32003L0098:EN:HTML accessed on 22 May 2009.

[694] Article 4.1.

through electronic means where possible and appropriate;[695]

- where charges are made the total income from supplying and allowing re-use of documents should not exceed the cost of collection, production, reproduction and dissemination, together with a "reasonable return on investment";[696]

- any conditions and charges applying to the re-use of documents must be transparent, i.e. they must be pre-established and published, through electronic means where possible and appropriate;[697]

- public sector bodies may allow for re-use of documents without conditions or may impose conditions, where appropriate, in the form of a licence, and such conditions are not to unnecessarily restrict possibilities for re-use and are not to be used to restrict competition;[698]

- licences can be adapted to meet particular licence applications and be made available in electronic form to enable them to be processed electronically and Member States are to encourage all public sector bodies to use the standard licences;[699]

- practical arrangements must be in place to:

  > facilitate the search for documents available for re-use, such as asset lists, accessible preferably on-line, of main documents and portal sites that are linked to decentralized asset lists;[700]

- any conditions on the re-use of documents must be "non-discriminatory for comparable categories of re-use";[701]

- where documents are re-used by a public sector body as input for commercial activities falling outside the scope of its public tasks, the same charges and other conditions are to apply to the supply of the documents for these activities as apply to other users;[702]

- the re-use of documents is to be open to all potential actors in the market;

- contracts or other arrangements between the public sector bodies holding the documents and third parties shall not grant exclusive rights";[703] and

- exclusive arrangements established after the entry into force of the Directive are to be

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[695] Article 5.

[696] Article 6 of Directive 2003/98/EC of the European Parliament and of the Council of 17 November 2003 on the re-use of the public sector information [2003] OJ L 345/90, available at http://www.epsiplatform.com/reports/european_directive_on_psi/directive_2003_98_ec and http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32003L0098:EN:HTML accessed on 22 May 2009.

[697] Article 7.

[698] Article 8.1.

[699] Article 8.2.

[700] Article 9.

[701] Article 10.1.

[702] Article 10.2.

[703] Article 11. There is a public interest exception to this prohibition in Article 11(2): 'Where an exclusive right is necessary for the provision of a service in the public interest, the validity of the reason for granting such an exclusive right shall be subject to regular review, and shall, in any event, be reviewed every three years. The exclusive arrangements established after the entry into force of this Directive shall be transparent and made public.'

transparent and made public and all existing exclusive arrangements that do not qualify for the exception in Art 11.2 are to be terminated at the end of the contract or not later than 31 December 2008.[704]

The European Commission commenced a review of the PSI Directive in 2008,[705] engaging in a public consultation process.[706] The EC published a summary report on its consultation on the impact of the PSI Directive on 29 November 2008 (referred to as the "Consultation Report").[707] The Consultation Report states:

> The Commission received 37 responses to the stakeholders' consultation. These embrace the different actors present in the PSI value chain: content holders (governmental agencies), commercial associations, private firms, public–private and non profit associations, private individuals, and 2 others that do not fall into any particular category (a political party and a PSI thematic network).

> The responses from the different associations and other re-users cover to a considerable degree the different active sectors of the information reuse market. Input was received from important reusers of legal and administrative and business information and the main European publishing and broadcasting associations. The ICT industry associations in Germany, Austria and Italy, representing the interests of the operators in their respective markets, also provided their views. The response of the PSI Alliance, which represents the views of an important group of private sector companies and associations active in the PSI field, should also be noted. Finally, the contribution of the ePSIplus network takes stock of a large consultation process through their network of stakeholders and national correspondents.

The European Commission's report on the review of the PSI Directive is considered further below.

As part of the review of the PSI Directive, the European Commission commissioned MICUS Management Consulting to undertake a survey of the PSI reuse market across Europe, focusing on geographic information, meteorological information and legal information.[708] The MICUS report, *Assessment of the Re-use of Public Sector Information (PSI) in the Geographical information, Meteorological Information and Legal Information Sectors (Final Report)* was published in December 2008.[709] Using 2002 as a baseline, the MICUS study found that the issues restricting PSI reuse are financial charges (pricing) and related licensing conditions which are too onerous.[710]

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[704] Article 11.3.

[705] See European Commission, Information Society Directorate-General, *Public Consultation: Review of the PSI Directive*, available at http://ec.europa.eu/information_society/policy/psi/docs/pdfs/online_consultation/review.pdf and http://www.epsiplus.net/news/ec_launches_public_consultation accessed on 22 May 2009.

[706] See for example the UK government's response at http://www.opsi.gov.uk/advice/psi-regulations/review-psi-directive-uk-response.pdf .

[707] See http://ec.europa.eu/information_society/policy/psi/docs/pdfs/online_consultation/report_psi_online_consultaion_stakeholders.pdf. and http://ec.europa.eu/information_society/policy/psi/online_consultation/review_Direct2008/stakeholders/index_en.htm.

[708] See http://www.micus.de/psi_studie/index_en.html.

[709] MICUS (Martin Fornefeld, Gaby Boele-Keimer, Stephan Recher and Michael Fanning), Assessment of the Re-use of Public Sector Information (PSI) in the Geographical information, Meteorological Information and Legal Information Sectors (Final Report), 2 December 2008, available at http://ec.europa.eu/information_society/policy/psi/docs/pdfs/micus_report_december2008.pdf.

[710] For comment, see Chris Corbin, *Enhanced Internet-enabled access and use of public sector information,* paper presented at IGF3, Hyderabad, December 2008 at http://www.epsiplus.net/media/files/corbin_report_meeting_41208_hyderabad.

"Re-use of Public Sector Information Review of Directive 2003/98/EC", Communication from the Commission to the European Parliament, The Council, the European Economic and Social Committee, and the Committee of the Regions (2009) [SEC (2009) 597]

On 7 May 2009, the European Commission published a Communication entitled *Re-use of Public Sector Information - Review of Directive 2003/98/EC* which sets out the findings and conclusions of the Commission's review of the PSI Directive.[711]

After considering the extent of implementation of the PSI Directive across EU member states, since its adoption in November 2003, and the impact and scope of the PSI Directive to date, the Communication observes that many members implemented the Directive with considerable delay, including in relation to exclusive arrangements. The Communication concludes that therefore the Directive in its present form has not yet had its full impact.[712]

The Communication indicates that the Commission does not propose any amendments to the PSI Directive at this time, but that a further review will be carried out no later than 2012. It is expected that more meaningful evidence of the impact, effects and application of the Directive will be available by that time. If, upon further review, the potential for reuse of PSI is found to still be being impeded by the current significant barriers identified, legislative amendments to the PSI Directive will be considered. The Communication identifies several key areas for reform in current EU members practices in the meantime.[713]

Following its review the Commission concluded:

> The PSI Directive has introduced the basic conditions to facilitate the re-use of PSI throughout the EU. Progress has been made since its adoption. Commercial re-use of PSI has been allowed, monopolies have been broken, fair trading conditions have been introduced, prices have decreased and there is more transparency. Progress and implementation of the Directive in the MS is however uneven.
>
> Big barriers still exist. These include attempts by public sector bodies to maximise cost recovery, as opposed to benefits for the wider economy, competition between the public and the private sector, practical issues hindering re-use, such as the lack of information on available PSI, and the mindset of public sector bodies failing to realise the economic potential.
>
> These problems and progress by MS to redress them need to be monitored and assessed before the Commission can consider legislative amendments to the PSI Directive. MS need to focus their efforts now on full and correct implementation and application of the Directive, terminating exclusive arrangements, applying licensing and charging models that facilitate the availability and re-use of PSI, ensuring equal conditions for public bodies reusing their own documents and other re-users, and promoting quick and inexpensive conflict resolution mechanisms.[714]

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[711] Commission of the European Communities, *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Re-use of Public Sector Information – Review of Directive 2003/98/EC – [SEC(2009) 597]* available at http://ec.europa.eu/information_society/policy/psi/docs/pdfs/directive/com09_212/com09_212_en.pdf accessed on 25 May 2009.
[712] Ibid, p 7.
[713] Ibid, pp 7-10.
[714] Ibid, p 10.

"PSI Policy Principles: European Best practice", Chris Corbin (2009)

At the *Joint International Conference* held in Prague on 12 and 13 May 2009 (which encompassed four separate conferences, including the Central and Eastern European Spatial Data Infrastructure conference), Chris Corbin of ePSIplus presented a paper entitled "*PSI Policy Principles: European Best practice*".[715] Corbin identifies features of good practice emerging in EU member states that are effectively implementing PSI reuse frameworks. His presentation outlines ten best practices for implementing systems to enable reuse of PSI, based on an analysis of information from EU member states:[716]

1. *Leadership*

   Member states should appoint one body to be the guardian of Public Sector Information Policies.

2. *Minimum Legal base*

   Members should keep the number of laws to a minimum especially those that relate to public sector bodies.

3. *Implementing the legal frameworks*

   When implementing the public sector re-use framework there should be a clear separation of the re-use framework law from the access to public sector information framework law.

4. *Financial charges*

   There should be either no financial charge or a charge based on the cost of provision (the distribution cost) and only then if it is cost effective to do so.

   The public sector information re-use framework should not be used as a mechanism to finance each public sector body and its public task.

5. *Licences*

   Avoid them if at all possible but if it is deemed that a Licence is required then there should be one standard simple licence that applies to the whole of the public sector - preferably a click-use type licence or attributed licence (a creative commons type licence).

6. *Exclusive arrangements*

   Avoid them altogether – there are very few examples where the public sector needs to enter into an exclusive arrangement in the interests of the society.

7. *Complaints process*

   A simple cost effective complaints process should be established that operates in a timely manner.

8. *An Effective redress system*

   Implement an effective re-dress system and empower a regulator to implement it and enforce the decisions.

9. *Waive copyright*

   Avoid applying copyright to public sector information that originates from within the public sector.

   If this cannot be done to ensure that the application of the copyright does not inhibit down stream re-

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[715] See http://www.epsiplatform.com/reports/joint_international_conference_prague_12_13_may_2009. The author Chris Corbin is an independent researcher on Information Policy. For general details of the conference see http://www.isaf.cz/index_en.php?iMenu=801&iMenuSec=iszl80&PHPSESSID=2757092d5647cd7563539f74ade7a72d
[716] See http://www.isaf.cz/prezentace/EIV/cee-sdi/corbin.pdf?PHPSESSID=2757092d5647cd7563539f74ade7a72d. .

use of public sector information…

10. *Avoid Competition*

Public Sector bodies should not compete with the private sector (or society) or compete within itself.

If it is deemed necessary for a public sector information holder to compete on the open market then this must only be permitted where:

- the trading entity is treated as any other re-user of public sector information (price, terms of conditions);

- there is no cross subsidisation;

- there is financial transparency; and

The public sector entity is subject to competition law and penalties. [717]

ePSI*plus*

ePSI*plus* is a program (described as a "thematic network") funded by the European Commission under the eContentplus program[718] to support the implementation of the PSI Directive throughout Europe. Since 2002, the European Union has been monitoring PSI access and reuse through the ePSI*plus* program.[719] The ePSI*plus* portal provides access to a wide range of information about developments in this field, across all EU member states, which is of interest to both public and private sector stakeholders.

The work of ePSI*plus* has focused on five major themes:

- legal and regulatory progress and impact
- public sector organisation and culture change
- encouraging PSI reuse business
- the financial impact: pricing and charging
- information management, standards and data quality.

The ePSI*plus* Thematic Network commenced in September 2006 and is funded to operate until 2011. The ePSIp*lus* Thematic Network has brought together relevant stakeholders, expertise and facilities with the objective of identifying best practices, building consensus, coordinating the development of specific approaches for improving the availability and usability of digital content and raising awareness on the approaches adopted. It hosted an extensive program of meetings including Thematic Meetings covering the five ePSI*plus* themes and National Meetings throughout Europe.[720]

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[717] See http://www.epsiplatform.com/news/psi_best_practice.

[718] See the eContentplus program website at http://europa.eu.int/information_society/activities/econtentplus/index_en.htm. The Decision No. 456/2005/EC of the European Parliament and of the Council, of 9 March 2005, establishing a multilateral Community programme to make digital content in Europe more accessible, usable and exploitable, Official Journal of the European Union L79/1, 24 March 2005, is available at http://europa.eu.int/information_society/activities/econtentplus/docs/prog_decision_2005/econtentplus_decision_en.pdf. For details of the eContentplus Work Program see http://europa.eu.int/information_society/activities/econtentplus/docs/call_2005/ecp_work_programme_2005.pdf.

[719] See generally http://www.epsiplus.net.

[720] These meetings have been supported by the ePSIp*lus* web site which provides access to a wide range of knowledge emerging in this field, across all EU member states, of key interest to public and private sector stakeholders – see

The final ePSI*plus* Thematic Meeting, which focused on practical measures to achieve significant growth in the market for products and services based on the reuse of PSI, was held in Paris on 3 February 2009. At the meeting, a range of models for promoting the implementation of the PSI Directive in the public and private sectors was discussed.[721]

"Public Sector Information Financial impact of the PSI Directive: Pricing and Charging Key Issues - An overview", ePSIplus (2007/2008)

The ePSI*plus* Program has produced numerous reports. This report, *Public Sector Information Financial impact of the PSI Directive: Pricing and Charging Key Issues - An overview*[722], authored by Chris Corbin, focuses on Theme 4 - the financial impact: pricing and charging.

The ePSI*plus* objective for theme 4 is to consider and report on:

- The effects of the *European Directive on Public Sector Information (PSI) Re-use* on the PSI value chain, on costs, access and organisation within the public sector, including remedies for budget loss as a result of new charging policies.

- The developments in pricing and charging policies that have occurred since the Directive came into force: emerging impact and approaches toward free of charge access, marginal costs charging, and 'reasonable return on investment' policies.

- The impact of varying fiscal and public sector cost-recovery approaches across Europe.

The ePSI*plus* approach to delivering these objectives used as a base line 31st December 2003 (when the Directive came into force upon publication in the Official Journal of the European Union) and then considered and analysed the impact of the Directive, if any, on the pricing and charging polices adopted by European PSI holders' (PSIH's). Workshops at which experts presented, considered and analysed the evidence were held in Helsinki (April 2007), London (November 2007) and Rome (June 2008). The materials from each workshop were published after the workshop. This document is the report prepared for the Helsinki workshop.

"Directive establishing an Infrastructure for Spatial Information", European

generally at http://www.epsiplus.net/ and for information on the Thematic Meetings, see http://www.epsiplus.net/events/thematic_meetings. The Thematic Meeting Reports and Summative Reports on ePSI*plus* themes can be accessed at http://www.epsiplus.net/events/access_epsiplus_thematic_meeting_and_country_reports/access_epsiplus_thematic_meeting_and_country_reports.

721 The final Thematic Meeting was attended by 38 public sector information stakeholders from 17 countries and the European Commission. See ePSIplus at http://www.epsiplus.net/events/thematic_meetings/final_thematic_meeting.

722 See http://www.epsiplus.net/events/thematic_meetings/financial_impact/financial_impact_overview_report

Parliament and Council (2007) ("the INSPIRE Directive")

The *Directive establishing an Infrastructure for Spatial Information*[723] ("the INSPIRE Directive") was adopted by the European Parliament and Council on 14 March 2007 and entered into force on 15 May 2007. It establishes EU policy and principles relating to spatial data held by public authorities and the use of spatial data held by these authorities in the performance of their public tasks. EU Member States are required to implement the INSPIRE Directive in their national legal systems by 15 May 2009.[724]

There is a degree of overlap between the spatial information covered by the INSPIRE Directive and the information covered by the Environmental Information Directive (2003/4/EC) and the PSI Directive (2003/98/EC). The INSPIRE Directive expressly states that it is without prejudice to Directives 2003/4/EC and 2003/93/EC[725] and that it does not affect the existence or ownership of public authorities' intellectual property rights.[726]

The INSPIRE Directive establishes EU policy and principles relating to spatial data held by or on behalf of public authorities and to the use of spatial data by public authorities in the performance of their public tasks.[727] Subject to certain conditions, the principles set out in the INSPIRE Directive may also be applied to spatial data held by natural or legal persons other than public authorities, provided those natural or legal persons request this.[728] The INSPIRE Directive is framed in the context of EU environmental policy which aims at a high level of environmental protection. The Recitals to the INSPIRE Directive explain the relevance of information to environmental policy-making, as follows:

- [I]nformation, including spatial information, is needed for the formulation and implementation of this policy and other Community policies, which must integrate environmental protection requirements in accordance with Article 6 of the Treaty. In order to bring about such integration, it is necessary to establish a measure of coordination between the users and providers of the information so that information and knowledge from different sectors can be combined.

- The problems regarding the availability, quality, organisation, accessibility and sharing of spatial information are common to a large number of policy and information themes and are experienced across the various levels of public authority. Solving these problems requires measures that address exchange, sharing, access and use of interoperable spatial data and spatial data services across the various levels of public authority and across different sectors. An infrastructure for spatial information in the Community should therefore be established.

- The Infrastructure for Spatial Information in the European Community (Inspire) should assist policy-making in relation to policies and activities that may have a direct or indirect impact on the environment.[729]

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[723] Directive 2007/2/EC of the European Parliament and the Council of 14 March 2007 establishing an Infrastructure for Spatial Information [2007] OJ L 108/1, 25 April 2007. See http://www.ec-gis.org/inspire/directive/l_10820070425en00010014.pdf and http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2007:108:0001:01:EN:HTML accessed on 22 May 2009.

[724] Article 24.

[725] Article 2(1).

[726] Article 2(2).

[727] Recitals, para 12.

[728] Ibid.

[729] Recitals, paras 1, 3 and 4.

The INSPIRE Directive addresses the issue of pricing of spatial data as follows:

> (23) Where a public authority supplies another public authority in the same Member State with spatial data sets and services required for the fulfilment of reporting obligations under Community legislation relating to the environment, the Member State concerned should be free to decide that those spatial data sets and services shall not be subject to any charging. The mechanisms for sharing spatial data sets and services between government and other public administrations and natural or legal persons performing public administrative functions under national law should take into account the need to protect the financial viability of public authorities, in particular those that have a duty to raise revenue. In any event, any charges applied should not exceed the cost of collection, production, reproduction and dissemination together with a reasonable return on investment.[730]

While the INSPIRE Directive warrants careful study, perhaps the provision of most relevance for international policy relating to access to spatial data is Chapter 5, Article 17 – "Data Sharing". It states:

> • Each Member State shall adopt measures for the sharing of spatial data sets and services between its public authorities referred to in point (9)(a) and (b) of Article 3. Those measures shall enable those public authorities to gain access to spatial data sets and services, and to exchange and use those sets and services, for the purposes of public tasks that may have an impact on the environment.
>
> • The measures provided for in paragraph 1 shall preclude any restrictions likely to create practical obstacles, occurring at the point of use, to the sharing of spatial data sets and services.
>
> • Member States may allow public authorities that supply spatial data sets and services to license them to, and/or require payment from, the public authorities or institutions and bodies of the Community that use these spatial data sets and services.
>
> Any such charges and licenses must be fully compatible with the general aim of facilitating the sharing of spatial data sets and services between public authorities. Where charges are made, these shall be kept to the minimum required to ensure the necessary quality and supply of spatial data sets and services together with a reasonable return on investment, while respecting the self-financing requirements of public authorities supplying spatial data sets and services, where applicable. Spatial data sets and services provided by Member States to Community institutions and bodies in order to fulfil their reporting obligations under Community legislation relating to the environment shall not be subject to any charging. …

In *Building European Spatial Data Infrastructures* (2007),[731] Ian Masser considers the existing European spatial data infrastructures (SDIs) and the efforts of the EU to create a framework for a multinational Infrastructure for Spatial Information in Europe (INSPIRE). As well as addressing the institutional and decision-making context within which SDIs are developed, Masser discusses the steps needed to create a legal framework for the INSPIRE project and identifies strategic issues for further SDI development.

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[730] Recitals, para 23.
[731] Masser, I, Building European Spatial Data Infrastructures, ESRI Press, 2007, see http://gis.esri.com/esripress/display/index.cfm?fuseaction=display&moduleid=0&websiteid=119.

"Commission Regulation (EC) 1205/2008 implementing Directive 2007/2/EC (INSPIRE) as regards metadata" (2008)

Article 1 of this Regulation sets out the requirements for the creation and maintenance of metadata for spatial data sets, series and services identified in the INSPIRE Directive.[732]

"Comparison of the PSI re-use (2003) and INSPIRE (2007) Directives", Roger Longhorn (2009)

In a presentation at the *ePSIplus* meeting in Paris in February 2009,[733] Roger Longhorn considered both the PSI Directive 2003/98/EC and the INSPIRE Directive 2007/2/EC. Longhorn observes that, in drafting the INSPIRE Directive, the European Union took into account what had been learned from the process of transposing and implementing the PSI Directive. As well as highlighting the similarities and differences between the Directives, Longhorn considers what can be transferred from the implementation of the INSPIRE Directive into the action plan for further advancing the implementation of the PSI Directive.

An important difference between the two Directives is that the INSPIRE Directive:

- Is more prescriptive and has follow on regulations
- Applies to legally mandated databases
- Refers to implementing rules such as the metadata regulations
- Has more specific dates, which connect to milestones, which must be met
- Has more implementing rules
- Contains more specific dates by which many important milestones must be met – legally enforceable – plus other dates are detailed in an adoption and implementation roadmap
- Accommodates technology changes, as it is possible to make changes to the implementing rules
- Has had so far hundreds of experts that have worked on the implementing rules for INSPIRE and has received support from a lot of dedicated human resources
- It does not address the issues of charging and competition, which are barriers to re-use[734]

Longhorn concludes:

1. The two Directives start from different premises and with different goals: **PSI re-use** was intended to help grow the information market in Europe using PSI; **INSPIRE** is very much oriented towards creating an information infrastructure, in this case focusing initially on geographic/spatial data and the interoperable services needed to locate, view, download and use that data.

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[732] Commission Regulation (EC) No 1205/2008 of 3 December 2008 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards metadata, http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:326:0012:0030:EN:PDF, accessed on 22 May 2009.

[733] See *Report: Final ePSIplus Thematic Meeting,* 3 February 2009, Paris, available at
http://www.epsiplus.net/events/thematic_meetings/final_thematic_meeting/presentations at pp 5-6.

[734] Ibid.

2. **PSI re-use** is a very generally worded, legal Directive, setting out principles that are aimed at helping the growth of the information market for PSI in Europe and globally. **INSPIRE** is a very prescriptive Directive - some say, overly prescriptive - including much more detail about implementation in the Directive text itself (which is nearly twice as long as the one on **PSI re-use**) and creating the legal basis for developing legally enforceable, detailed Implementing Rules at a later date, following a prescribed regulatory procedure involving the INSPIRE Regulatory Committee.

3. **PSI re-use** places no reporting requirement on the Member States, regarding implementation aspects, other than adoption itself. **INSPIRE** devotes both a detailed Article on Member States obligations to report on the implementation of the Directive, to both the Commission and public, on a stated timetable and in very prescribed formats dictated by a legally enforceable Commission Decision.[735]

"Directive on Public Access to Environmental Information", European Parliament and Council (2003) ("the Environmental Information Directive")

The *Directive on Public Access to Environmental Information*[736] builds on the Aarhus Convention and provides rights to access environmental information held by public authorities. Its objectives include:

- to guarantee the right of access to environmental information held by or for public authorities and to set out the basic terms and conditions of, and practical arrangements for, its exercise; and

- to ensure that, as a matter of course, environmental information is progressively made available and disseminated to the public in order to achieve the widest possible systematic availability and dissemination to the public of environmental information. To this end the use, in particular, of computer telecommunication and/or electronic technology, where available, shall be promoted.[737]

The Environmental Information Directive places a positive obligation upon a public authority to permit timely access to environmental information. It also provides that where an applicant's application lacks specificity, the public authority must assist the applicant and clarify the request.

Access may be refused under numerous exemptions, some of which include, where the request is manifestly unreasonable, or may adversely affect international relations, public security or defence, or where the request is directed to the incorrect public authority. In such a case, the public authority must transfer the request to the correct agency.

Charges applied to applications under this Directive are to be confined to a reasonable amount for making the information available. Public Authorities are required to make their list of charges public. Article 8 of the Environmental Information Directive requires the information to be given under a request to be of good quality.

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[735] Ibid.

[736] Directive 2003/4/EC of the European Parliament and of the Council of 28 January 2003 on Public Access to Environmental Information and Repealing Council Directive 90/313/EEC (2003). See: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32003L0004:EN:HTML, Official Journal L 041, 14/02/2003 P. 0026 – 0032.

[737] Ibid.

"Towards a Shared Environmental Information System (SEIS)", Communication from the Commission of the European Communities to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions (2008)

The Shared Environmental Information System (SEIS) is designed to make environmental information more readily available and easier to access and reuse. It aims to move away from paper-based reporting to a system where information is managed as close as possible to its source and made available to users in an open and transparent way.

The Communication from the Commission describes the SEIS[738] as:

> a collaborative initiative of the European Commission and the European Environment Agency (EEA) to establish together with the Member States an integrated and shared EU-wide environmental information system. This system would tie in better all existing data gathering and information flows related to EU environmental policies and legislation. It will be based on technologies such as the internet and satellite systems and thus make environmental information more readily available and easier to understand to policy makers and the public.[739]

The Communication also sets out underpinning principles which are the product of several studies and expert reflection over several years, and are designed to ensure that environmental information is organised as effectively as possible.[740] The objective is to ensure that the investments currently allocated towards monitoring and other information-gathering processes lead to the greatest possible benefits in terms of the use that is made of the resulting data.

The principles are based on an acknowledgement of the fact that while a vast amount of data is collected by public authorities across the EU (whether at local, regional, national or European level), it is not always used efficiently, either because of the existence of such data is not widely known or because of a range of obstacles of a legal, financial, technical and procedural nature.

The principles are as follows:

- information should be managed as close as possible to its source;
- information should be collected once, and shared with others for many purposes;
- information should be readily available to public authorities and enable them to easily fulfil their legal reporting obligations;
- information should be readily accessible to end-users, primarily public authorities at all levels from local to European, to enable them to assess in a timely fashion the state of the environment and the effectiveness of their policies, and to design new policy;
- information should also be accessible to enable end-users, both public authorities and citizens, to make comparisons at the appropriate geographical scale (e.g. countries, cities, catchment areas) and to participate meaningfully in the development and implementation of environmental policy;
- information should be fully available to the general public, after due consideration of the appropriate

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[738] See http://ec.europa.eu/environment/seis/index.htm.

[739] Commission of the European Communities, Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions - Towards a Shared Environmental Information System (SEIS) {SEC(2008) 111}{SEC(2008) 112}, Brussels, 1.2.2008 COM(2008) 46 final, available at
http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52008DC0046:EN:NOT. For more details of the SEIS data sharing initiative see http://ec.europa.eu/environment/seis/index.htm.

[740] The various case studies and projects from which the principles have been drawn are set out in the Communication.

level of aggregation and subject to appropriate confidentiality constraints, and at national level in the relevant national language(s); and

- information sharing and processing should be supported through common, free open-source software tools. [741]

This Communication also describes other accompanying measures, to be taken at European, national and local level that will be necessary to implement the principles.

"Scientific Information in the digital age: access, dissemination and preservation", Communication from the Commission of the European Communities to the European Parliament, the Council and the European Economic and Social Committee (2007)

The Community policy on research seeks to maximise the socio-economic benefits of research and development for the public good. The European Commission's Communication on *Scientific Information in the digital age: access, dissemination and preservation*[742] represents an initial step within a wider policy process addressing how the scientific publication system functions and what impact it has on research excellence. It came at a strategic moment for European research with the launch of the Seventh Framework Programme (FP7) for 2007 - 2013 and the Communication on developing the European Research Area (ERA).

This Communication's objective is to signal the importance of, and launch a policy process on (a) access to, and dissemination of, scientific information, and (b) strategies for the preservation of scientific information across the Union. To this end, it announces a series of measures at European level and points to the need for a continuing policy debate.

"Commercial Exploitation of Europe's Public Sector Information", PIRA International (2000)

The report, *Commercial Exploitation of Europe's Public Sector Information*, published in September 2000,[743] (the PIRA Report) identified the features of the US federal government approach to exploitation of PSI as being:

> a strong freedom of information law, no government copyright, fees limited to recouping the cost of dissemination, and no restrictions on reuse.[744]

The PIRA Report observed that none of the EU member state had such a straightforward policy as the United States. The European private sector has long argued that the existing revenue-based licensing models for PSI used by various EU member states have operated against their interests and those of consumers by impeding the development of new products. This study claims to be the

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[741] See http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52008DC0046:EN:NOT.

[742] Commission of the European Communities Communication (2007) 56, Brussels, 14 February 2007 http://ec.europa.eu/research/science-society/document_library/pdf_06/communication-022007_en.pdf.

[743] See the Executive Summary at http://ec.europa.eu/information_society/policy/psi/docs/pdfs/pira_study/2000_1558_en.pdf) and the Final Report at http://ec.europa.eu/information_society/policy/psi/docs/pdfs/pira_study/commercial_final_report.pdf.

[744] Ibid, Final Report, p 8.

first to suggest that such revenue based models may operate against the financial interests of governments. In this context, the Report observes in the Executive Summary that:

> [a]lthough governments gain income from the commercial license fees, they lose the taxation and employment benefits from the higher volumes of commercial activity that would be generated by abandoning charges.[745]

The PIRA Report estimated the economic value of PSI in Europe at an amount of 68 billion euros and conservatively projected a doubling of market size if licence fees were removed, producing additional taxation revenues to more than offset income lost from charges for PSI.

The Report identified two key goals, namely creating a single European market and facilitating a fair trading environment as leading to the better exploitation of PSI and contributing significantly to the central goal of maximising its commercial value.

The PIRA Report's recommendations include:

- remove friction from PSI trading by making it available digitally at marginal cost for non-exclusive, non-restrictive reuse;

- make electronic publishing the primary means of dissemination;

- give information a place in national accounts; and

- enforce transparency of roles, deals and accounting. Current competition law needs to be enforced as effectively in the public/ private domain of exploitation of PSI as in other sectors.[746]

"Measuring European Public Sector Information Resources (MEPSIR): Final report of a study of exploitation of public sector information – benchmarking EU framework conditions", Dekkers, Polman, te Velde and de Vries (2006)

The MEPSIR study of the value of PSI in the European Union concluded that estimates for the overall size of the market for PSI in the EU range from 10 to 48 billion euros, with a mean value of around 27 billion euros. This amounts to 0.25% of the total aggregated GDP for the EU (10,730 billion euros).[747]

The MEPSIR Study was commissioned by the European Commission as part of the preparation for the review of European Directive 2003/98/EC (the PSI Directive) of 17 November 2003. The review was conducted from November 2004 to April 2006. Two key objectives of the study were to

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[745] Ibid, p 9.

[746] Ibid, pp 104-107.

[747] Makx Dekkers, Femke Polman, Robbin te Velde and Marc de Vries, *Measuring European Public Sector Information Resources (MEPSIR): Final report of a study of exploitation of public sector information – benchmarking EU framework conditions*, 2006; See generally http://ec.europa.eu/information_society/policy/psi/actions_eu/policy_actions/mepsir/index_en.htm; Final Report (1st part) at http://ec.europa.eu/information_society/policy/psi/docs/pdfs/mepsir/final_report.pdf; Final Report (2nd part) at http://ec.europa.eu/information_society/policy/psi/docs/pdfs/mepsir/final_report_detailed.pdf; Executive Summary at http://ec.europa.eu/information_society/policy/psi/docs/pdfs/mepsir/executive_summary.pdf.

"develop, document and test a repeatable methodology for measurement of PSI re-use, and to perform a baseline measurement of PSI re-use in the European Union and Norway, including a comparison with the United States."[748]

The part of the study addressing the value of PSI in the European Union concluded that estimates for the overall size of the market for PSI in the EU range from 10 to 48 billion euros, with a mean value of around 27 billion euros. This amounts to 0.25% of the total aggregated GDP for the EU (10,730 billion euros).[749]

"Statement on Open Access", Scientific Council of the European Research Council (2006)

The Statement was produced by the Scientific Council of the European Research Council. Research Councils which provide public funding for research have progressively announced that they are adopting open access policies which require research results to be deposited in open access repositories.

In February 2007, the European Commission (EC) announced that it planned to support more cost-free access to the results of the best of European science and scholarship. The ERC Scientific Council is composed of 22 renowned scientists, engineers and scholars, research leaders. The Scientific Council is an independent body representing the European research community in all its breadth and depth and acting independently of political or other interest.

The ERC Scientific Council of the European Research Council issued its Statement on Open Access in December 2006, stating:

1. [I]t is the firm intention of the ERC Scientific Council to issue specific guidelines for the mandatory deposit in open access repositories of research results – that is, publications, data and primary materials – obtained thanks to ERC grants, as soon as pertinent repositories become operational.

2. The ERC Scientific Council moreover hopes that research funders across Europe will join forces in establishing common open-access rules and in building European open access repositories that will help make these rules operational. To facilitate this process for EU funded research, it recommends that the European Commission sets up a task force including representatives from the various FP7 programmes (Cooperation, Ideas, People, …) to develop an operational FP7 policy on open access by the end of 2007 (which takes in particular into account disciplinary differences and technological constraints).[750]

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[748] Ibid. See Executive Summary p 3.
[749] Ibid. See Executive Summary p 16.
[750] Available at http://erc.europa.eu/pdf/open-access.pdf.

"Guidelines for Open Access", Scientific Council, European Research Council (2007)

On the basis of the December 2006 *Statement on Open Access* and other developments,[751] the Scientific Council of the European Research Council established the following interim position on open access:

- The ERC requires that all peer-reviewed publications from ERC-funded research projects be deposited on publication into an appropriate research repository where available, such as PubMed Central, ArXiv or an institutional repository, and subsequently made Open Access within 6 months of publication.

- The ERC considers essential that primary data - which in the life sciences for example could comprise data such as nucleotide/protein sequences, macromolecular atomic coordinates and anonymised epidemiological data - are deposited to the relevant databases as soon as possible, preferably immediately after publication and in any case not later than 6 months after the date of publication.[752]

The ERC is aware of the desirability of reducing the embargo period of 6 months between publication and open access.

The developments which informed the Research Council's interim position as set out above are as follows:

1. Scientific research is generating vast, ever increasing quantities of information, including primary data, data structured and integrated into databases, and scientific publications. In the age of the Internet, free and efficient access to information, including scientific publications and original data, will be the key for sustained progress.
2. Peer-review is of fundamental importance in ensuring the certification and dissemination of high-quality scientific research. Policies towards access to peer reviewed scientific publications must guarantee the ability of the system to continue to deliver high-quality certification services based on scientific integrity.
3. Access to unprocessed data is needed not only for independent verification of results but, more importantly, for secure preservation and fresh analysis and utilisation of the data.
4. A number of freely accessible repositories and curated databases for publications and data already exist serving researchers in the EU. Over 400 research repositories are run by European research institutions and several fields of scientific research have their own international discipline-specific repositories. These include for example PubMed Central for peer-reviewed publications in the life sciences and medicine, the arXiv Internet preprint archive for physics and mathematics, the DDBJ/EMBL/GenBank nucleotide sequence database and the RSCB-PDB/MSD-EBI/PDBj protein structure database.
5. With few exceptions, the social sciences & humanities (SSH) do not yet have the benefit of public central repositories for their recent journal publications. The importance of open access to primary data, old manuscripts, collections and archives is even more acute for SSH. In the social sciences many primary or secondary data, such as social survey data and statistical data, exist in the public domain, but usually at national level. In the case of the humanities, open access to primary sources (such as archives, manuscripts and collections) is often hindered by private (or even public or nation-state) ownership which permits access either on a highly selective basis or not at all.[753]

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[751] See http://erc.europa.eu/pdf/ScC_Guidelines_Open_Access_revised_Dec07_FINAL.pdf.
[752] Available at http://www.earlham.edu/~peters/fos/2008/01/oa-mandate-from-european-research.html. Although the Guidelines document is dated 17 December 2007 it was not released online until January 2008.
[753] Ibid.

United Kingdom

The United Kingdom has established itself at the forefront of European Union member states in implementing initiatives to enable access to public sector materials. It took the lead in 2005 by transposing the PSI Directive into UK law[754] and establishing an effective administrative regime, central to which is the Office of Public Sector Information (OPSI).[755] From the mid-2000s, the UK government has demonstrated a broad commitment to the introduction of reforms to enable access to PSI, commissioning a series of important reports from which it has drawn guidance, including the *Power of Information: an independent review* (2007)[756], the report on *Models of Public Sector Information Provision via Trading Trusts* ("the Cambridge Report")[757] and the *Power of Information Taskforce report* (2009).[758] Throughout these reports are findings and recommendations that support the introduction of fundamental reforms to longstanding policies and practices on access to and reuse of PSI, including those of the Ordnance Survey Office[759] and other trading trusts.[760] In the forum of public opinion, since 2006 the Guardian newspaper has run its influential *Free our Data* online campaign which serves to highlight perceived shortcomings in current access and pricing practices at the national and local government levels.[761]

The UK government's embrace of the interactive functionality of web 2.0 technologies to foster engagement with citizens and provide greater access to PSI closely parallels developments in the

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754 The PSI Directive was given effect in UK law through the Re-use of PSI Regulations 2005 (S.I. 2005 No. 1515). The UK was one of 8 EU member states to implement the Directive by the nominated date of 1 July 2005.

755 http://www.opsi.gov.uk. The UK has also established an Advisory Panel on Public Sector Information, http://www.appsi.gov.uk. See the 2008 and 2009 annual reviews of OPSI's activities: *Unlocking PSI Potential: The United Kingdom Report on the Re-use of Public Sector Information* (2008), Office of Public Sector Information, available at
http://www.opsi.gov.uk/advice/psi-regulations/uk-report-reusepsi-2008.pdf and *The United Kingdom Report on the Re-use of Public Sector Information: unlocking PSI potential* (2009), Office of Public Sector Information at http://www.opsi.gov.uk/advice/psi-regulations/uk-report-reuse-psi-2009.pdf A timeline of the UK's implementation of the PSI Directive from mid-2005 to mid-2008 is available on the ePSI Platform website at http://www.epsiplatform.com/good_practice/uk_psi_timeline The UK has also established an Advisory Panel on Public Sector Information, http://www.appsi.gov.uk.

756 Ed Mayo and Tom Steinberg, *The Power of Information: an independent review*, (June 2007), commissioned by the Cabinet Office, UK Government, available at http://www.opsi.gov.uk/advice/poi/index, http://www.cabinetoffice.gov.uk/newsroom/news_releases/2007/070607_power.aspx and http://www.cabinetoffice.gov.uk/reports/power_of_information.aspx.

757 David Newbery, Lionel Bently and Rufus Pollock, *Models of Public Sector Information Provision via Trading Funds*, Cambridge University (26 February 2008), available at http://www.opsi.gov.uk/advice/poi/models-psi-via-trading-funds.pdf.

758 *Power of Information Taskforce report*, Power of Information Taskforce, chaired by Richard Allan (February 2009), available at http://poit.cabinetoffice.gov.uk/poit/. See also the Power of Information Taskforce site at http://powerofinformation.wordpress.com/.

759 In April 2009, the Ordnance Survey published a new Business Strategy with proposals for improvements in how it makes it data available, designed to provide "the best balance between making information more widely available and creating a sustainable future for Ordnance Survey and the wider market". See http://strategy.ordnancesurvey.co.uk/

760 See also *Digital Britain: the final report*, UK Government, Department for Culture, Media and Sport and Department for Business, Innovation and Skills, 16 June 2009, available at http://www.culture.gov.uk/what_we_do/broadcasting/6216.aspx. Note in particular, recommendation 79 at p 24.

761 The Guardian's Free our Data website is at http://www.guardian.co.uk/technology/free-our-data See also the Free our Data blog at http://www.freeourdata.org.uk/blog/.

United States from early 2009 under the Obama administration.[762] An indication of the weight the UK government places on the development of new models of public information delivery is found in the appointment in June 2009 of Sir Tim Berners-Lee, the inventor of the world wide web, as its expert advisor. Sir Tim is leading a panel of experts to advise the Minister for the Cabinet Office on how the UK government can best use the internet to make public data as widely available as possible.[763]

"The Re-use of Public Sector Information Regulations 2005"

The Re-use of Public Sector Information Regulations 2005[764] implement in the European Directive on the re-use of public sector information[765] in the United Kingdom.[766] The Regulations came into force on 1 July 2005.

With the purpose of establishing appropriate standards and an ethos of sharing good practices across the entire public sector, the Regulations contain provisions relating to:

- identification of what material is available for re-use;
- provision of clear information about charging and the basis for charges levied;
- prompt turnaround of applications for access to PSI;
- transparency and fairness of terms and conditions; and
- establishment of a robust and fair complaints process.[767]

A summary of the provisions of the Regulations is set out in the accompanying explanatory notes:

> Regulations 2, 3 and 4 contain definitions of expressions in these Regulations, including a definition of "public sector body" in regulation 3 and "re-use" in regulation 4.

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[762] See, for example, the report of the UK Cabinet Office Strategy Unit, *Power in People's Hands: Learning from the World's Best Public Services,* July 2009, available at http://www.cabinetoffice.gov.uk/strategy/publications/world-class-public-services.aspx accessed 18 July 2009. See Guardian article, 4 June 2009 at http://www.guardian.co.uk/technology/2009/jun/04/free-our-data

[763] See *Pioneer of the World Wide Web to advise the government on using data*, UK Cabinet Office, 10 June 2009, at http://www.cabinetoffice.gov.uk/newsroom/news_releases/2009/090610_web.aspx; *Web inventor to help Downing Street to free up government data*, Charles Arthur, The Guardian, 10 June 2009, at http://www.guardian.co.uk/technology/2009/jun/10/berners-lee-downing-street-web-open. See also, an article by Sir Tim Berners-Lee, *Putting Government Data Online,* at http://www.w3.org/DesignIssues/GovData.html , accessed 19 July 2009.

[764] Statutory Instrument 2005 No. 1515, http://www.opsi.gov.uk/si/si2005/20051515. The Regulations came into force on 1 July 2005.

[765] Directive 2003/98/EC of the European Parliament and of the Council on the re-use of public sector information

[766] The progress made with the implementation of the EU PSI Directive in the UK has been reviewed in reports produced on an annual basis by OPSI, commencing in 2007: *The United Kingdom Implementation of the European Directive on the Re-use of Public Sector Information - the first two years,* (2007) http://www.epsiplus.net/media/files/uk_implementation_first_years ; *Unlocking PSI Potential: The United Kingdom Report on the Re-use of Public Sector Information* (2008), http://www.opsi.gov.uk/advice/psi-regulations/uk-report-reuse-psi-2008.pdf and *The United Kingdom Report on the Re-use of Public Sector Information: unlocking PSI potential* (2009), http://www.opsi.gov.uk/advice/psi-regulations/uk-report-reuse-psi-2009.pdf

[767] For further details see the OPSI report, *The United Kingdom Implementation of the European Directive on the Re-use of Public Sector Information - the first two years,* Office of Public Sector Information (2007), p4, available at http://www.epsiplus.net/media/files/uk_implementation_first_years.

…

Regulation 7 provides that a public sector body has a discretion as to whether to permit re-use of a document in response to a request. Where a public sector body permits re-use it must act in accordance with regulations 11 to 16.

Regulation 8 sets out how a public sector body should respond, and the timescales for responding, to a request for re-use.

Regulation 9 provides that where a public sector body refuses a request for re-use it must notify the applicant, give reasons for the refusal and inform the applicant of its internal complaints process and other means of redress.

Regulation 10 provides that, where possible and appropriate, a public sector body must ensure that the processing of requests for re-use can be carried out by electronic means.

Regulation 11 provides for the format and language in which a document may be provided to an applicant.

Regulation 12 allows a public sector body to impose conditions on re-use, but only where those conditions do not unnecessarily restrict the way in which a document can be re-used or restrict competition.

Regulation 13 requires that a public sector body must not impose discriminatory conditions on applicants who request re-use of a document for comparable purposes and that where a public sector body re-uses a document itself for an activity outside of its public task it must apply the same conditions to itself as to any other applicant for re-use for a comparable purpose.

Regulation 14 prohibits a public sector body entering into an exclusive arrangement for re-use except where it is necessary for the provision of a service in the public interest. Regulation 14 also makes transitional provisions to cover exclusive arrangements in existence on the coming into force of the Regulations.

Regulation 15 sets out the basis on which a public sector body may charge an applicant for allowing re-use.

Regulation 16 provides that a public sector body must publish information on conditions for re-use, standard charges, main documents available for re-use and means of redress; and, so far as possible, all such information should be made available, and in the case of the list of available documents, searchable, by electronic means.

Regulation 17 requires a public sector body to establish an internal complaints procedure to determine complaints arising under these Regulations.

Regulation 18 sets out the arrangements for the referral by a person of a complaint made under regulation 17 to *the Office of Public Sector Information* [OPSI] where he has exhausted the public sector body's complaints procedure or where the public sector body has failed to deal with the complaint within a reasonable time. *Where the public sector body in question is the Office of Public Sector Information, Her Majesty's Stationery Office or the Office of the Queen's Printer for Scotland, the person may refer this complaint directly to the Advisory Panel on Public Sector Information [AAPSI].*

Regulation 19 requires the Office of Public Sector Information to publish its procedures for considering complaints referred to it under regulation 18 and the arrangements for notifying the person and the relevant public sector body in writing of any recommendation it makes.

Regulation 20 provides for the Advisory Panel on Public Sector Information [AAPSI] to review any recommendation made by the Office of Public Sector Information under regulation 19. Regulation 20 also provides for the form that a request for review must take.

Regulation 21 requires the Advisory Panel on Public Sector Information [AAPSI] to publish its procedures for considering complaints referred to it under regulation 18 and for conducting reviews under regulation 20 and the arrangements for notifying the person, the relevant public sector body and the Office of Public Sector Information of any recommendation it makes. [emphasis added]

The Office of Public Sector Information (OPSI)

With the implementation of the EU Directive on the re-use of Public Sector Information in 2005, through the *Re-use of Public Sector Information Regulations 2005*, the UK government determined that there was a need for a dedicated body to be the main focal point for advising on and regulating the operation of the re-use of public sector information (PSI).[768] The Office of Public Sector Information (OPSI) was established to fulfill this role, commencing operations in 2005.[769] The OPSI, operating from within the National Archives following the merger of the two in October 2006, is positioned at the centre of the UK's information policy system, setting standards, and developing a practical framework of best practice for opening up and encouraging the use of PSI.

OPSI has subsumed Her Majesty's Stationery Office (HMSO) which has a long and august history extending over several centuries. [770] In 1996 the trading functions of the HMSO were privatised, although the HMSO retained its other functions. In 2000 the ongoing responsibilities of the HMSO evolved further following the Cross-Cutting Review of the Knowledge Economy. The amended function of the reformed HMSO was to regulate standards of best practice in the field of Crown copyright licensing; the Information Asset Register, online Click-Use licensing ensuring that HMSO continued to deliver innovative e-services, as well as the publication of legislation.'

Advisory Panel on Public Sector Information (APPSI)

The Advisory Panel on Public Sector Information (APPSI) is a non-departmental public body, established on 14 April 2003 by Douglas Alexander MP, Minister for the Cabinet Office. [771]

An important function of the APPSI is to review and consider complaints under the *Re-use of Public Sector Information Regulations 2005*. The APPSI is also to advise on the impact of the complaints procedures established under the Regulations. Members of APPSI are drawn from a wide variety of backgrounds including providers, re-users and consumers of public-sector information, experts from academia and industry, and representatives of producer and consumer groups and the devolved administrations.[772]

The other two key functions of the APPSI are:

- To advise Ministers on how to encourage and create opportunities in the information industry for greater re-use of public sector information;

- To advise the Director of the Office of Public Sector Information and Controller of Her Majesty's Stationery Office about changes and opportunities in the information industry, so that the licensing of Crown copyright and public sector information is aligned with current and emerging developments [773]

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[768] See http://www.opsi.gov.uk/about/index.
[769] See http://www.opsi.gov.uk/about/index.htm
[770] See http://www.opsi.gov.uk/about/hmso-history.htm. The HMSO has a long and distinguished history having been established in 1786 - in the reign of King George III (under the title of His Majesty's Stationery Office).
[771] See http://www.appsi.gov.uk/AAPSIPage/page/AboutUs. In October 2006, APPSI became a Non-Departmental Public Body of the Ministry of Justice (then the Department of Constitutional Affairs).
[772] See http://www.appsi.gov.uk/members/index.htm accessed on 4 June 2009.
[773] See http://www.epsiplus.net/links/advisory_panel_on_public_sector_information_appsi accessed on 4 June 2009.

"PSI Regulations Guidance Notes", Office of Public Sector Information (OPSI) (undated)

OPSI has published on its website Guidance Notes to the PSI Regulations, to provide practical help to public sector organisations on how they can meet their responsibilities under the Regulations.[774] One of the matters dealt with in the PSI Regulations Guidance Notes is the relationship between "access" and "reuse":

1. Access to most public sector information is provided by the *Freedom of Information Acts* and by the *Environmental Information Regulations*. But provision of information under this access legislation does not mean that the recipient has an automatic right to re-use it, for example to publish it, or adapt it in some way. Most information supplied in response to an access request will be protected by copyright and permission to re-use it will be required.

2. *The Re-use of Public Sector Information Regulations* provide a framework for obtaining this permission. However, they do not apply unless the document has already been provided to an applicant or is otherwise accessible to the applicant. They do not provide a means of obtaining access to information that is not already accessible, whether under access legislation or by some other means.[775]

The Guidance Notes explain the right to give permission to re-use information as follows:

3. A public body can usually provide information received from a third party in response to an access request but it may not be able to give permission for re-use of that information. That right remains with the owner of the copyright which will not necessarily be the body holding the information. The PSI Regulations do not apply to information where copyright is owned by a third party.

4. Most material created by central government departments is protected by Crown copyright. The Office of Public Sector Information (OPSI) is responsible for Crown copyright. Permission to reproduce Crown copyright material can usually be obtained from OPSI through its website.[776]

"The United Kingdom Report on the Re-use of Public Sector Information 2009: unlocking PSI potential", Office of Public Sector Information (OPSI) (2009)

The progress made with the implementation of the EU PSI Directive in the UK has been reviewed in reports produced annually by OPSI, commencing in 2007.[777] This is the third report in the series, charting the key initiatives and landmarks that shaped the UK's information policy landscape in the 12 months up to June 2009.[778]

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[774] See http://www.opsi.gov.uk/advice/psi-regulations/advice-and-guidance/psi-guidance-notes/index, accessed 20 July 2009.

[775] See http://www.opsi.gov.uk/advice/psi-regulations/advice-and-guidance/psi-guidance-notes/links-between-access-and-reuse, accessed 20 July 2009.

[776] Ibid.

[777] See also *The United Kingdom Implementation of the European Directive on the Re-use of Public Sector Information - the first two years* (2007), http://www.epsiplus.net/media/files/uk_implementation_first_years; *Unlocking PSI Potential: The United Kingdom Report on the Re-use of Public Sector Information* (2008), http://www.opsi.gov.uk/advice/psi-regulations/uk-report-reuse-psi-2008.pdf

[778] Office of Public Sector Information, *The United Kingdom Report on the Re-use of Public Sector Information 2009: unlocking PSI potential*, July 2009, available at http://www.opsi.gov.uk/advice/psi-regulations/uk-report-reuse-psi-2009.pdf

The report concludes that:

> The last year has been characterised by the increasing number of initiatives that have helped drive change and new attitudes towards the management and re-use of PSI. The progress made in the UK was highlighted in the Commission's formal review of implementation of the European Directive. It is imperative that we maintain the momentum and continue to make progress in this challenging policy area as the potential rewards are immense.[779]

Going forward, OPSI's main focus in driving the PSI agenda will be on raising awareness, increasing compliance with the PSI Regulations and developing innovative solutions and initiatives that maximise re-use.[780] The report sets out several action items to be pursued by OPSI in 2009-2010:

- Action 1: Building on recent developments, reinforce and maintain momentum in UK public sector organisations.
- Action 2: Using the outcomes of the current reviews and assessments, reframe the UK guidance and best practice in response to evolving policies and customer needs.
- Action 3: Continue to use established tools to enable information re-users to have confidence and clarity in the definitions and different approaches to trading activity across the public sector.
- Action 4: Reinforce the risk to the business and services of public sector organisations and encourage exemplars to champion good information management practices by directed guidance and targeted support.
- Action 5: Clarity around licensing re-use of data that has aggregated third party copyright material within it will be produced in revised guidance.
- Action 6: Communication and alerts to all public sector organisations will be renewed with tracking of progress on the OPSI site.
- Action 7: A single copyright web page with one reference for the copyright and licensing conditions across government will be explored to deliver coherence and consistency.
- Action 8: OPSI and The National Archives will continue to work within current resources harnessing technology and pooling resources and expertise to deliver the improvements needed, alive to the demands and expectations that this agenda places on the organisations to deliver the UK goals.[781]

"The Common Information Environment and Creative Commons: Final Report to the Common Information Environment Members of a study on the applicability of Creative Commons Licences", Intrallect and University of Edinburgh (2005)

The *Common Information Environment and Creative Commons: Final Report to the Common Information Environment Members of a Study on the Applicability of Creative Commons Licences* (2005) was produced by Intrallect and University of Edinburgh for the UK's Common Information Environment (CIE) project.[782] The CIE, whose membership was comprised of Becta, the British Library, DfES, JISC and MLA, commissioned Intrallect and the University of Edinburgh to investigate whether open content licences (such as Creative Commons) could be used to clarify and

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[779] Ibid, p 67.
[780] Ibid, p 64.
[781] Ibid, pp 64-67.
[782] Intrallect Ltd (E Barker, C Duncan) and AHRC Research Centre for Studies in Intellectual Property and Technology Law, The University of Edinburgh (A Guadamuz, J Hatcher and C Waelde), *Common Information Environment and Creative Commons: Final Report to the Common Information Environment Members of a Study on the Applicability of Creative Commons Licences*, 10 October 2005, available at http://www.era.lib.ed.ac.uk/handle/1842/2244.

simplify the process of making electronic resources available for re-use.[783]

The report observed that, in responding to legislative, cultural and economic forces to make resources available for re-use, public sector organisations will have to make difficult decisions when considering the specific conditions on which material is licensed.[784] To be able to make such decisions, the report considered it would be advisable to make them on a 'sound and principled basis'.[785] The report recommended that in order to achieve strong motivation in CIE organisations to make their resources more readily available for use, it would be necessary for them to have "a clear policy that is disseminated throughout the organisation".[786] Any such policy would have to be based on the benefits to the organisation and users and the required changes to organisational practice. The report recommended that each CIE organisation should make an active decision on whether it would adopt a policy for encouraging re-use of its resources.[787]

The report further recommended that CIE organisations adopting a policy for encouraging re-use should consider basing it on the following principles:

1. Resources should be made available for reuse unless there is a justifiable reason why they should not.
2. The reuse of resources should be as unconstrained as possible. For example, resources should be made available for commercial reuse as well as non-commercial reuse wherever possible.
3. The range of permitted uses of resources should be as wide as possible, for example, including the right to modify the resource and produce derivative works from it.
4. Reuse should be encouraged by permitting others to redistribute resources on a world-wide basis.
5. Resources should be made directly available and discoverable electronically whenever possible.
6. The conditions of use for each resource should be linked directly to the resource so that they are reusable at the point of discovery.[788]

On the issue of the suitability of Creative Commons licences, the report concluded:

Creative Commons licences are suitable for the publication of many resources produced by public sector organisations, including those produced by organisations in the Common Information Environment, because the baseline conditions and choices can meet many situations. CIE Organisations adopting a policy of making resources available for reuse should use the following set of Creative Commons licences to meet their licensing principles unless there is a clear reason for not doing so:

• Attribution-only (BY) licence meets the most general conditions of principle 2
• Attribution-Non-commercial-Share-alike (BY-NC-SA) licence meets the more specific conditions of principle 3
• Attribution-Non-commercial-No-derivatives (BY-NC-ND) licence can be used if modification is to be prevented

CIE organisations that are publishing materials for reuse should use Creative Commons wherever possible but when resources cannot be licensed under Creative Commons the first choice should be another commonly used licence such as Creative Archive or Click-Use, in order to minimise the number of licences used. However some resources may exist under conditions which would not allow a standard licence to be used and these resources could be made available under a customised licence. Customised licences should be based on Creative Commons baseline rights as much as possible.[789]

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[783] Ibid, p 7.
[784] Ibid, p 27.
[785] Ibid.
[786] Ibid.
[787] Ibid.
[788] Ibid, p 5
[789] Ibid, p 5.

"Commercial Use of Public Information", Office of Fair Trading (2006)

The report, *Commercial Use of Public Information* ("CUPI"),[790] commissioned by the Office of Fair Trading (OFT), examined the markets for PSI and how well the supply of PSI was meeting the needs of customers. The report considered:

- what PSI is available for re-use, at what price and on what terms; and

- whether businesses can compete with PSI holders (PSIHs) in the supply of products/services to which value has been added by the PSIHs.

The report found that unrefined information is not as easily available as it should be, licensing arrangements are restrictive, prices are not always linked to costs and PSIHs may be charging higher prices to competing private sector firms and giving them less attractive terms than apply to the PSIHs own value-added operations.

PSIHs are usually the only source for much of this unrefined data, and although some make this available to businesses for free, others charge. A number of PSIHs also compete with the private sector in turning the raw information into value-added products and services. This could enable PSIHs to restrict access to information provided solely by themselves.

Examples of PSI include weather observations collected by the Met Office, records held by The National Archives used by the public to trace their family history, and mapping data collated by Ordnance Survey. The underlying unrefined information is vital for businesses wanting to make value-added products and services such as in-car satellite navigation systems.

The report has also found that much of the legislation and guidance which aims to ensure access to information is provided on an equal basis, is lacking in clarity and inadequately monitored. As a result the full benefits of public sector information are not being realised.

The OFT concluded that PSIHs should:

- make as much PSI available as possible for commercial use/re-use;
- ensure that businesses have access to PSI at the earliest point that it is useful to them;
- provide access to information where the PSIH is the only supplier on an equal basis to all businesses and the PSIH itself;
- use proportionate cost-related pricing and to account separately for their monopoly activities and their value- added activities so that PSIH's can demonstrate that they are providing and pricing information fairly and in a non-discriminatory manner; and
- enable OSPI to better monitor PSIHs, with improved enforcement and complaints procedures.[791]

The report considered that the recommended reforms for greater competition would result in the

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[790] Office of Fair Trading, *Commercial Use of Public Information,* (December 2006) available at http://www.oft.gov.uk/shared_oft/reports/consumer_protection/oft861.pdf.
[791] See Executive Summary, pp 4-14.

production of a wider range of competitively priced goods and services for consumers and the generation of more widespread productivity improvements across the economy. It was estimated that greater competition could benefit the UK economy by around £1billion a year, doubling its current contribution.

"Power of Information Review", Ed Mayo and Tom Steinberg (2007)

The *Power of Information Review,*[792] an independent report commissioned from Ed Mayo and Tom Steinberg by the UK Government, argues that government can now grasp the opportunities that are opening up in terms of the creation, use and re-use of information.

The Report states:

Information produced by the public sector has economic value

Public sector information can generate economic value of two broadly different kinds:

- direct value: revenue generated for government by selling access to public sector information; and
- commercial value: revenue generated by companies who make use of public sector information.

One of the most easily measured forms of economic value generated by public sector information is the direct revenue earned by parts of the public sector selling information. In 2006, the Office of Fair Trading (OFT) estimated revenues from the public sector information market at £590 million per year.

Companies pay for public sector information because it helps them make or save money. The Met Office, for example, is aware that 'every year UK companies lose thousands of pounds because of the weather – from late or absent staff, delayed deliveries, surplus or insufficient stock to cancellation of projects'. Consequently, it offers services, built on public sector information, that help businesses make informed decisions that prevent the loss of company money.

Companies that use or re-use public sector information can generate revenue, part of which is later paid to government in the form of corporation tax. Estimating how much is paid in tax, or how much could be, is difficult but important. According to an economic study commissioned by Ordnance Survey, its geographic information underpins an impressive £100 billion of activity in the UK economy. It is easy to see that without good-quality mapping, postcodes or land ownership information, large parts of the economy would be unable to function at all (i.e. anything that required delivery, or sale, rental or purchase of property).[793]

There are barriers to re-using information produced by Government

Research from the Statistics Commission and the Office of Fair Trading shows that many users of public sector information report barriers to accessing the information that they need in order to add value.

Common sorts of barriers include:

- information that is too hard to find;
- information that is in the wrong format, making it hard or impossible to reuse;
- information not being made available when it is needed;
- not knowing that a certain piece of information exists in the first place;
- use of the information being constrained by licensing terms; and

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[792] Ed Mayo and Tom Steinberg, *The Power of Information: An independent review* (June 2007), available at http://www.cabinetoffice.gov.uk/media/cabinetoffice/strategy/assets/power_information.pdf accessed 5 June 2009.
[793] Ibid, p 14.

- information that is too expensive.

These barriers create costs, as well as other problems for both information users and government. The Office of Fair Trading estimates that improved availability of information to re-users could double the direct market value of public sector information to £1.1 billion per year, and has made a detailed series of recommendations to help government do this – recommendations that this review endorses.

Much of this improvement is expected to come from better exploitation of public sector information that is already available at marginal cost, but that may not be very widely known or easy to access. Public sector information is often not considered valuable because the public sector body that creates it does not perceive its value and so does not try to make it easily available. Similarly, it is often not considered valuable or exploited because nobody outside government is aware that the valuable information exists.[794]

The UK Government's Response,[795] published on 25 June 2007, welcomed the report and accepted its recommendations, including recommendations that government:

- supplies innovators that are re-using government-held information with the information they need, when they need it, in a way that maximises the long terms benefits of all citizens;
- protects the public interest by preparing citizens for a world of plentiful (and sometimes unreliable) information; and
- helps excluded groups to take advantage.

"Models of Public Sector Information Provision via Trading Funds", David Newbery, Lionel Bently and Rufus Pollock, Cambridge University (2008)

The significant economic report Models of Public Sector Information Provision via Trading Funds by David Newbery, Lionel Bently and Rufus Pollock (sometimes referred to simply as the Cambridge Report) was commissioned jointly by the Department for Business, Enterprise and Regulatory Reform and HM Treasury in July 2007.[796] It focuses on the pricing of PSI held by Trading Trusts, including the Ordnance Office, and provides an analysis of the costs and benefits of existing and alternative models for PSI being provided through these trading trusts.[797] The study forms part of the UK government's response to the earlier Office of Fair Trading's report *Commercial use of public information* (CUPI) dated 7 December 2006.[798] The Cambridge report

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[794] Ibid, p 19.

[795] UK Government, *The Government's Response to The Power of Information: An independent review by Ed Mayo and Tom Steinberg* (June 2007), available at http://www.cabinetoffice.gov.uk/media/cabinetoffice/corp/assets/publications/reports/power_information/power_inform ation_response.pdf accessed 5 June 2009. Also see the separate entry for the Power of Information Task Force Report (2009) in this chapter.

[796] David Newbery, Lionel Bently and Rufus Pollock, *Models of Public Sector Information Provision via Trading Funds*, Cambridge University (26 February 2008), http://www.opsi.gov.uk/advice/poi/models-psi-via-trading-funds.pdf.

[797] In the Executive Summary at page 1, the six largest trading trusts measured by data provision are identified as being the Met Office, Ordnance Survey, the UK Hydrographic Office, the Land Registry, Companies House and the Driver Vehicle Licensing Authority.

[798] http://www.oft.gov.uk/advice_and_resources/resource_base/market-studies/completed/public-information. Also see the separate entry for the report in this chapter. Additionally such a study had been recommended in other government and independent publications on public sector information (PSI) charging policies, including HM Treasury's *Cross Cutting Review of the Knowledge Economy* (2000), the Government Response (2007) to the Office of Fair Trading's CUPI study, and the *Power of Information review* (2007) (recommendation 9). For more details see the Cambridge Report, p 5.

sets out estimates of the costs and benefits of marginal-cost pricing, based on the assumptions used by the Cambridge University team and the data they were able to collect.[799]

This report describes the background to its commissioning in the following terms:

> Currently, in accordance with recommendations in the *Cross Cutting Review*, raw information from across government is priced at marginal cost by default. However, Trading Funds have greater flexibility in how they charge for PSI and are not required to adhere to marginal cost pricing. Both the OFT's *CUPI study* and the *Power of Information* review recommended that Trading Funds' charging policies should be reformed. The government responded that any such reforms would be made on the basis of careful analysis of the costs and benefits of various charging models to producers, consumers and the wider information market. It is to these costs and benefits that the present study attends.[800]

As an indication of factors relevant to possible future policy reform by the UK government on these economic issues and trading trusts, the Department for Business, Enterprise and Regulatory Reform on its website states:

> Going forward, the Government will look closely at the public sector information held by trading funds to distinguish more clearly what is required by Government for public tasks, ensuring this information is made available as widely as possible for use in actual and potential downstream markets.

> In the lead up to the next spending review, it will also ensure that it is priced appropriately. The underlying principle will be that information collected for public purposes will be made available at a price that balances the need for access while ensuring customers pay a fair contribution to the cost of collecting this information in the long-term. [801]

The Cambridge team's core task was to consider the costs and benefits for society, and the effects on government revenue, of four different charging policies: profit maximisation, average cost (cost recovery), marginal cost and zero cost.[802] The inherent interplay between data supply policy, rights of reuse and distribution, and pricing policy also comes under analysis:

> The question of reuse and redistribution are also of great importance in evaluating data supply policy but are not explicitly covered by the charging regime alone. We therefore should state clearly that in the first two cases, those of profit-maximizing and cost-recovery pricing, it is our assumption that, for any given product, a trading fund would be at liberty to impose any conditions on reuse and redistribution of its data permitted by the underlying intellectual property rights existing in that material. While in the second two cases, that of marginal-cost and zero-cost pricing, it is our assumption that a trading fund would be making the data `openly' available so that anyone who acquired data would be free to reuse or redistribute in any way they saw fit. In particular, it should be made clear that the impact of using share-alike licenses will not be considered formally, nor will the possibility of discriminating by fields of endeavour, for example by permitting free (zero-cost or marginal-cost) use of material for non-commercial purposes but following a cost-recovery or profit-maximizing pricing policy for commercial users.[803]

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[799]   David Newbery, Lionel Bently and Rufus Pollock, *Models of Public Sector Information Provision via Trading Funds* (26 February 2008) ('The Cambridge Report') available at http://www.opsi.gov.uk/advice/poi/models-psi-via-trading-funds.pdf accessed on 5 June 2009. See Chapter 5, p 53.

[800] Ibid. See Chapter 2, The Introduction and Background.

[801]   See http://www.berr.gov.uk/whatwedo/businesslaw/competition/market-studies/public-information/page39978.html, under the sub-heading, Analysis of Pricing Models, under Market Study on Commercial Use of Public Information (CUPI).

[802] The Cambridge Report, available at http://www.opsi.gov.uk/advice/poi/models-psi-via-trading-funds.pdf. See pp 11 and 12 for descriptions of each of these policies.

[803] Ibid. See 2.4, Charging Policies, at pp 12-13.

"Power of Information Task Force Report", Power of Information Task Force (2009)

In 2008 the UK government established the Power of Information Taskforce (chaired by Richard Allan) in response to Ed Mayo and Tom Steinberg's 2007 *Power of Information Review* (PoI Review).[804] The PoI Review focused on the need for government to adapt in order to engage fully with a world in which most citizens use the internet as part of their everyday lives.

The recommendations in the *Power of Information Task Force Report (2009)* (PoI Task Force Report) build upon the recommendations of the PoI Review.[805] Some key recommendations in the PoI Task Force Report are that government should adopt a highly permissive use 'Crown Commons' style licensing regime, and that geospatial data be urgently freed up through significant reform of the Ordnance Survey.

The PoI Task Force called for action in six areas where it believed significant improvements could be achieved in the government's use of digital technologies:

- enhancing Digital Britons' online experience by providing expert help from the public sector online where people seek it;
- creating a capability for the UK public sector to work with both internal and external innovators;
- improving the way government consults with the public;
- freeing up the UK's mapping and address data for use in new services;
- ensuring that public sector information is made as simple as possible for people to find and use;
- building capacity in the UK public sector to take advantage of the opportunities offered by digital technologies.[806]

The Executive Summary contains the following statements which are of particular relevance to access to and reuse of PSI:

> Data and information are the lifeblood of the knowledge economy. The report's recommendations on liberalising non-personal government information would provide an information stimulus if implemented.
> The report refers specifically to the need for a more liberal approach to the re-use of mapping and address data in the UK based on the evident demand for this type of information. It makes recommendations for Ordnance Survey, the UK's official mapping agency, to free up their licensing regime in general and to make information available for free, on simple terms, for innovators and the third sector.
> If data is to be truly useful for a broad range of innovators it must be easy to obtain and the terms under which it can be used have to be as open and intelligible as possible. The report therefore recommends actions on the cataloguing of public sector information and on government licensing terms, especially in respect of the most common government licensing scheme, Crown Copyright.[807]

Some of the key recommendations set out below are directly relevant to reforming current government practices relating to access and re-use (and pricing), including in particular Recommendation 8 for government to adopt a highly permissive licensing scheme (a 'Crown

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[804] The Power of Information Review is available at http://www.cabinetoffice.gov.uk/media/cabinetoffice/strategy/assets/power_information.pdf. See separate entry for the 2007 report in this chapter.

[805] See http://poit.cabinetoffice.gov.uk/poit/. The Task Force drew together members from government, industry and a group, described on this website, as the "third sector who all share a passion for using ICT to enable better public service delivery". All members acted in their personal capacities and therefore independently.

[806] Ibid, Executive Summary, pdf version at p 4, http://poit.cabinetoffice.gov.uk/poit/category/execsummary-final/.

[807] Ibid.

Commons' in style) that is transparent and easy to understand and use, and also Recommendation 12 advocating that the OPSI actively campaign to increase understanding and acceptance of the permissive characteristics of Crown Copyright so as to reflect the same outcomes clearly demonstrated by the open content licensing model represented by the Creative Commons licences:

Recommendation 7

It is the Taskforce's view that 'freeing up' geospatial data should be a priority. The Ordnance Survey requires urgent reform. Recent announcements of cost reductions at the Ordnance Survey point the way to wider reforms. This reform should include at a minimum:

- Basic geographic data such as electoral and administrative boundaries, the location of public buildings, etc should be available for (re)use free of charge to all.
- There should be simple, free access to general mapping and address data for modest levels of use by any user.
- Voluntary and community organisations pursuing public policy objects should benefit from straightforward standard provisions for ensuring access to geospatial data at all levels of use
- Licensing conditions should be simplified and standardised across the board and, for all but the heaviest levels of use, should be on standard terms and conditions and should not depend on the intended use or the intended business model of the user.
- The OpenSpace API, similar to but currently a constrained version of Google Maps, should become the primary delivery point for the Ordnance Survey's services.
- Creation of a freely available single definitive address and postcode available for the UK for (re)use.[808]

Recommendation 8

- Government should ensure that there is a uniform system of release and licensing applied across all public bodies; individual public bodies should <u>not</u> develop or vary the standard terms for their sector.
- ***The system should create a 'Crown Commons' style approach, using a highly permissive licensing scheme that is transparent, easy to understand and easy to use, modeled on the 'Click Use' license***, subject to the caveats below.
- OPSI, part of the National Archives, should investigate how source code can be handled within the public sector information framework, and look into appropriate licensing terms drawing on best practice in the open source community.
- The Government should report on the options for these three recommendations by end 2009 and if required, statutory measures should be brought forward not later than the 2009/2010 session.[809]

    [emphasis added]

    ……

Recommendation 10

Public information should be available at marginal cost, which in practice means for free online. Exceptions to this rule should pass stringent tests to ensure that the national benefit is actually served by charging for information and thus limiting its reuse. OPSI (part of The National Archives) should define and consult publicly upon such tests which they then enforce.[810]

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[808] Ibid, Reform Geospatial Data, pdf version at pp 19-21, http://poit.cabinetoffice.gov.uk/poit/category/maps-final/.

[809]   Ibid,   Modernise   data   publishing   and   re-use,   pdf   version   at   pp   22-24, http://poit.cabinetoffice.gov.uk/poit/category/data-final/.

[810] Ibid, Modernise data publishing and re-use – Embedding Best Practice, pdf version at pp 24-25, http://poit.cabinetoffice.gov.uk/poit/2009/02/embedding-best-practice-final/.

Recommendation 12

> ***OPSI should begin a communications campaign to re-present and improve understanding of the permissive aspects of Crown Copyright along the lines of creative commons by end June 2009***. This should be combined with 'permission to scrape' being given over Crown Copyright data, removing any risk of prosecution under the Computer Misuse Act. This might fall under the banner of a 'Crown Commons' brand. OPSI should begin a communications campaign to that end by end June 2009.[811] [emphasis added]

In that part of the Report relevant to open access to PSI generally and in particular to the analysis relevant to Recommendation 8, the following instructive passage appears:

> **Right of Re-Use**
>
> **Consistent, comprehensible rights to reuse information from public bodies**
>
> > *'...to protect individual liberty we should have the freest possible flow of information between government and the people...Public information does not belong to Government, it belongs to the public on whose behalf government is conducted.'*
> > Gordon Brown, Prime Minister, Liberty Speech 29 October 2007
> >
> > *'...Information maintained by the Federal Government is a national asset. ...Executive departments and agencies should harness new technologies to put information about their operations and decisions online and readily available to the public.'*
> > President Barack Obama, Presidential Memorandum 21 January 2009
>
> Yochai Benkler put the economic case in favour of this approach in the Wealth of Networks. It has since been expanded on in Government and the Invisible Hand. MySociety in the UK and the Sunlight Foundation in the United States of America demonstrate practical applications.
>
> The entries to the Show Us a Better Way competition run by the Taskforce illustrated many new ways of reusing public information to support or enhance public services. The Taskforce was pleased to see a similar exercise developed in parallel in the US by Apps for Democracy, which generated further good ideas.
>
> However, much of the information innovators sought in the UK was held not by central government but by organisations in the wider public sector - particularly local authorities, police forces, schools, the Post Office and the National Health Service. This information is not easy to access, impeding innovation, economic activity and democratic expression.[812]

The Report then goes on in this context to address in some detail the two important and inter-related issues of consistency of licensing and the availability of PSI.[813]

"Digital Enlargement: Update on Power of Information", UK Government (2009)

In the recent report, *Digital Enlargement: Update on Power of Information,* released 12 May 2009, the UK government responded to the Power of Information Task Force Report. The government accepted in principle the recommendation of the Task Force that the Ordnance Survey requires

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[811] Ibid, Modernise data publishing and re-use – Embedding Best Practice, pdf version at pp 22-24, http://poit.cabinetoffice.gov.uk/poit/2009/02/embedding-best-practice-final/.
[812] Ibid, Modernise data publishing and re-use, pdf version at pp 22-24, http://poit.cabinetoffice.gov.uk/poit/category/data-final/.
[813] Ibid.

urgent reform in order to 'free up' geospatial data (Recommendation 7).[814] However, the government decided that the Ordnance Survey (OS) will continue to be self-funded and earn revenue by licensing its data, but will make sure it is easier for customers and other businesses to access OS data and services.[815] The government also accepted Recommendation 8 of the Task Force Report, stating that the Office of Public Sector Information (OPSI) is developing a new licence model that will "take the licensing of government content to the next level."[816] This licence model is likely to take the form of a "Crown Commons" licence.[817]

Subsequently on 29 May 2009, it was reported on the OS website that the UK government considers that OS needs to embrace a new business strategy in order to provide the optimum balance between making data more readily available and at the same time secure the future viability of OS and the geographic information market. The new business strategy, which focuses on five key issues, is to be further developed over the next 12 months.[818]

"Information Fair Trader Scheme", Office of Public Sector Information (2009)

The Information Fair Trader Scheme sets and assesses standards for public sector bodies by encouraging them to promote the re-use of information.

In May 2009, the Office of Public Sector Information (OPSI) announced a further stage in the development of the Information Fair Trader Scheme (IFTS).[819] The development takes the form of the addition of three new principles to supplement the three existing IFTS principles of transparency, fairness and challenge. The OPSI announcement states:

> The Information Fair Trader Scheme (IFTS) has been successful in raising standards in information trading across the public sector. Building on this success, OPSI has introduced three new IFTS principles:
>
> • *Maximisation* – this changes the emphasis of IFTS so that information can be re-used unless there are strong reasons not to.
> • *Simplicity* – facilitating re-use through simple processes, policies and licence terms;

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[814] UK Government (2009) *Digital Enlargement: Update on Power of Information,* 12 May 2009, p 24, available at http://www.epsiplus.net/reports/uk_power_of_information_review/digital_enlargement_update_on_power_of_informati on at 12 June 2009.
[815] Ibid.
[816] UK Government (2009) *Digital Enlargement: Update on Power of Information,* 12 May 2009, p 24, available at http://www.epsiplus.net/reports/uk_power_of_information_review/digital_enlargement_update_on_power_of_informati on accessed on 12 June 2009.
[817] OPSI has recently posted on its blog its initial outline of the new licence model, intended to be compatible with standard licences such as Creative Commons and GNU GPL, and called for comments. Early comments posted seriously query, on various grounds, whether the intended compatibility has been achieved by the draft which largely reflects the Click Use licence. See http://perspectives.opsi.gov.uk/2009/06/opsis-new-licensing-model-taking-the-licensing-of-government-content-to-the-next-level.html.
[818] See http://strategy.ordnancesurvey.co.uk/. The five key issues are:
    1.   Promote innovation for economic benefit and social engagement;
    2.   Increase the use of Ordnance Survey data;
    3.   Support the sharing of information across the whole of the public sector;
    4.   Increase efficiency to develop a sustainable business for the future; and
    5.   Enhance value through the creation of an innovative trading entity.
For comment see also http://www.iwr.co.uk/information-world-review/news/2243769/price-model-set-shift.
[819] See http://www.epsiplatform.com/news/opsi_raises_the_bar.

Open access policies, practices and licensing

- *Innovation* – where public sector organisations actively remove obstacles to re-use and introduce initiatives that encourage re-use.

These principles will sit alongside existing IFTS principles of:

- Transparency – being clear and up front about the terms of re-use;
- Fairness – applying terms fairly without any discrimination;
- Challenge – ensuring that re-use is underpinned by a robust complaints process.[820]

The current IFTS has two levels, Full IFTS Accreditation and IFTS Online Assessment.[821]

The OPSI is examining feedback provided by stakeholders on these new additional principles.

"Digital Britain Report", UK Government (2009)

The UK government initiative *Digital Britain* commenced in October 2008, and published an interim report on 29 January 2009 before publishing the final report *Digital Britain* (White Paper) on 16 June 2009.[822] The White Paper represents one of the central policy commitments in the UK government's *Building Britain's Future* plan and draft legislative program and encapsulates the government's strategic vision for ensuring that the UK is at the leading edge of the global digital economy. [823] Importantly, the vision extends to government providing greater access to, and clearer rights of reuse of, PSI under enabling licensing "pathways".[824]

The following is a succinct departmental outline:

The [final] report contains actions and recommendations to ensure first rate digital and communications infrastructure to promote and protect talent and innovation in our creative industries, to modernize TV and radio frameworks, and support local news, and it introduces policies to maximize the social and economic benefits from digital technologies.[825]

As the Foreword indicates, the UK government's industrial strategy *Building Britain's Future: New Industry, New Jobs* acknowledges that Britain needs an active industrial policy if it is to maximise the benefits from the digital revolution.[826] This strategy requires a clear and effective approach which is "consistent, ensures full access, provides regulatory certainty, smarter public procurement

[820] Ibid.
[821] See http://www.opsi.gov.uk/ifts/index. The Full IFTS Accreditation represents the OPSI's gold standard accreditation scheme and involves onsite verification. This level of accreditation is aimed at major public sector information traders and trading funds which wish to meet a very high standard of compliance with IFTS principles and the Re-use of Public Sector Information Regulations 2005. The second and lower level of compliance is the IFTS Online Assessment designed for all public sector bodies seeking to demonstrate their basic compliance with the IFTS principles and the Regulations. For more details on higher level of accreditation see http://www.opsi.gov.uk/ifts/full-ifts.
[822] See UK Government, Department for Culture, Media and Sport and Department for Business, Innovation and Skills, *Digital Britain: Final Report,* 16 June 2009, available at http://www.culture.gov.uk/what_we_do/broadcasting/6216.aspx accessed on 30 June 2009. See press release at http://www.culture.gov.uk/reference_library/media_releases/6220.aspx.
[823] Ibid, Chapter 1 (Executive Summary), p 7.
[824] Ibid, p 24 (Paragraph 79).
[825] Outline by the Department for Culture, Media and Sport, available at http://www.culture.gov.uk/what_we_do/broadcasting/6216.aspx.
[826] Ibid, Foreword, by the Right Honourable Lord Mandelson and Right Honourable Ben Bradshaw MP, p 1.

and shows a readiness to intervene where necessary".[827] The Foreword states that the *Digital Britain* White Paper offers a strategic view of the digital economy, backed by a programme of action:

- to complement and assist the private sector in delivering the effective modern communications infrastructure we need, built on new digital technologies;
- to enable Britain to be a global centre for the creative industries in the digital age, delivering an ever wider range of quality content, including public service content, within a clear and fair legal framework;
- to ensure that people have the capabilities and skills to flourish in the digital economy, and that all can participate in digital society; and
- for government to continue to modernise and improve its service to the taxpayer through digital procurement and the digital delivery of public services.[828]

The significant role that government plays in the digital economy, including through enhanced access to and reuse of PSI (as identified by the Power of Information Task Force) is also addressed:

> **74.** Apart from its influence on the overall economic and legislative framework, **Government impacts on the Digital Economy** in four ways: In delivery of public services, as a major purchaser of digital systems, *as commissioner and holder of data and content and as a strategic hub for the development of Britain's future digital strength*. This Digital Britain Report sets out the next steps in the journey towards truly Digital Government – Government <u>of</u> the web not just <u>on</u> the web.
>
> **75.** The UK is further ahead than many other countries in that journey. But citizens' expectations are rising. The private sector's re-engineering of its business practices for the digital world is accelerating. And the pressures on public expenditure require a step change in the efficiency of the delivery of purchases and ICT procurement.
> …
>
> **79**. *Public Service data and content play an increasingly important role in the digital economy. The Government has embraced the vision of the Power of Information Task Force and, in respect of important data sources for innovation, such as geospatial data, agencies are significantly improving access to data and clearer licensing pathways from innovation to large scale commercial use.*[829] [italics added]

Research Councils UK updated position statement on access to research outputs (2006)

The Research Councils UK updated position statement on access to research outputs, issued in June 2006, records that in June 2005, the Executive Group of Research Councils UK (RCUK) issued a draft position statement on access to research outputs.[830] As a result of discussions and consultation undertaken after the 2005 document, the research councils remain committed to the 2005 principles and to progress in their activities to implementation.[831]

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[827] Ibid.

[828] Ibid.

[829] Ibid, p 23 (paragraphs 74 and 75) and p 24 (paragraph 79). Publication of the Final Report represents the first step in delivering the *Digital Britain* agenda.

[830] Research Councils UK, *Access to Research Outputs - RCUK position on issue of improved access to research outputs*, available at http://www.rcuk.ac.uk/research/outputs/access/default.htm accessed on 5 June 2009.

[831] For example, see the Engineering and Physical Sciences Research Council (EPSRC) statement at http://www.epsrc.ac.uk/AboutEPSRC/AccessInfo/ROAccess.html. The EPSRC also states on its website in the context

The principles state that:

- Ideas and knowledge derived from publicly-funded research must be made available and accessible for public use, interrogation and scrutiny, as widely, rapidly and effectively as practicable.
- Published research outputs must be subject to rigorous quality assurance, through effective peer review mechanisms.
- The models and mechanisms for publication and access to research results must be both efficient and cost-effective in the use of public funds.
- The outputs from current and future research must be preserved and remain accessible for future generations.[832]

After affirming these principles the Research Councils UK updated position statement goes on to address the issues of author-pays publishing and self-archiving in the context of the changing publications environment.

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of implementing the principles that:

> The issues are complex, and range from ascertaining who publishes research information and who pays for it to be published, deciding where it should be published (the internet has completely changed the way we disseminate information) to determining how we assess the validity and quality of published findings. In addition, decisions have to be made on where and how this information will be archived and who pays for its long-term storage?

[832] *Research Councils UK' updated position statement on access to research* outputs, p 1 available at http://www.rcuk.ac.uk/cmsweb/downloads/rcuk/documents/2006statement.pdf accessed 5 June 2009.

Chapter 5: The United States of America

Information is the currency of democracy.
Thomas Jefferson

Among the first, perhaps the very first instrument for improvement of the condition of the governed, is knowledge, and to the acquisition of much of the knowledge adapted to the wants, the comforts, and the enjoyments of human life public institutions and seminaries of learning are essential.
John Quincy Adams

A popular government without popular information or the means of acquiring it, is but a prologue to a farce, or a tragedy, or both.
James Madison

The United States of America, like Australia and Canada, has a federal system of government. However, unlike Canada and Australia, the United States has a long history of support for public access to government information, as illustrated in the comments above by Thomas Jefferson, John Quincy Adams and James Madison. There has also been a long held commitment to the principle that scientific information and research results should, as far as possible, be shared broadly within the scientific community.[833]

This strong support of the open access philosophy appears to be due to a variety of factors including historical, governmental and cultural. In this regard whilst it is important to recognise that the absence of copyright to protect federal government agencies' information is one clear contributing factor it certainly is not the only one. Whilst the Office of Management and Budget (OMB) Circular A-130 issued by the federal government in 2000 clearly reinforced the open access policy, this initiative needs to be seen as part of a much longer historical process through which open access policy has been progressively developed and strengthened. Consistent with this longstanding and strong commitment to an open access policy position the United States federal government has developed and articulated a clear set of underpinning open access principles which are to be implemented.

The US framework for access to government information is characterised by broad rights to electronically access government information and re-use it for commercial purposes, a lack of restrictions on re-use, the limiting of charges to the marginal costs of reproduction and dissemination and the absence of copyright in federal government materials. In view of the long-standing commitment to the accessibility of government information in the United States, it is not surprising that there is a large body of material addressing the economic, social and legal aspects of open access.

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[833] See the National Security Decision Directive 189, *National Policy on the Transfer of Scientific, Technical and Engineering Information,* issued by the Reagan White House on 21 September 1986, which stated that "[i]t is the policy of this Administration that, to the maximum extent possible, the products of fundamental research remain unrestricted". The term "fundamental research" is defined as meaning "basic and applied research in science and engineering, the results of which ordinarily are published and shared broadly within the scientific community, as distinguished from proprietary research and from industrial development, design, production, and product utilization, the results of which ordinarily are restricted for proprietary or national security reasons." See http://www.aau.edu/research/ITAR-NSDD189.html.

Central to the US legislative and policy framework supporting access to and re-use of PSI are two key documents: the US *Copyright Act 1976* and the Office of Management and Budget's Circular A-130 ("OMB Circular A-130").[834] Section 105 of the US *Copyright Act 1976* excludes works of the federal government from being eligible for copyright protection. Circular A-130, issued by the OMB in 2000, establishes guidelines for the management of federal information based on the *Paperwork Reduction Act 1980* (PRA), as amended by the *Paperwork Reduction Act 1995* (44 U.S.C. Chapter 35), and several other statutes and orders, requiring federal agencies to actively disseminate public information without restrictions or conditions, at a cost no greater than the cost of dissemination.[835] It is the US federal government's most significant policy statement on access to PSI. As well as acknowledging that government information is a valuable public resource and that the nation stands to benefit from the dissemination of government information, OMB Circular A-130 requires improperly restrictive practices to be avoided. Additionally, Circular A-16, entitled Coordination of Geographic Information and Related Spatial Data Activities, provides that US federal agencies have a responsibility to "[c]ollect, maintain, disseminate, and preserve spatial information such that the resulting data, information, or products can be readily shared with other federal agencies and non-federal users, and promote data integration between all sources."836

Open access remains a key point of interest in current US political and administrative discourse. In 2008, the US National Institutes of Health[837] (the largest funder of basic biomedical research in the world, spending US$27 billion in the 2005 financial year) and Harvard University faculties (the Law School[838] and the Faculty of Arts and Sciences[839]) introduced mandatory open access publishing policies, requiring peer-reviewed journal publications to be made available in open access repository.[840] President Obama came into office in January 2009 with a technology policy aimed at creating "a transparent and connected democracy", including the use of technology "to reform government and improve the exchange of information between the federal government and citizens while ensuring the security of our networks".[841] On his first day in office President Obama

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[834] See Office of Management and Budget (OMB), OMB Information Initiative, FGDC Newsletter, Vol 5, No 1, at http://www.fgdc.gov/.

[835] For an overview of the US regulatory framework, see Nancy E Weiss, *Overview of US Federal Government Information Policy*, presented at OECD Working Party on Information Economy workshop on public sector information, Paris, 4 – 5 February 2008, at http://www.oecd.org/dataoecd/28/0/40047022.pdf accessed on 5 June 2009.

[836] Office of Management and Budget Circular A-16 on the Coordination of Geographic Information and Related Spatial Data Activities (OMB Circular A-16) (issued 16 January 1953, revised in 1967, 1990, 2002) Section 8, http://www.whitehouse.gov/omb/circulars_a016_rev/#8.

[837] See NIH's Revised Policy on Enhancing Public Access to Archived Publications Resulting from NIH-Funded Research, at http://grants.nih.gov/grants/guide/notice-files/NOT-OD-08-033.html accessed on 22 May 2009. NIH's mandatory open access policy has received legislative backing by the Consolidated Appropriations Act 2008 (Division G, Title II, Section 218 of Public Law 110-161); see NIH's Revised Policy on Enhancing Public Access to Archived Publications Resulting from NIH-Funded Research, at http://grants.nih.gov/grants/guide/notice-files/NOT-OD-08-033.html.

[838] See http://www.law.harvard.edu/news/2008/05/07_openaccess.php.

[839] Adopted 12 February 2008, see http://www.fas.harvard.edu/~secfas/February_2008_Agenda.pdf and http://www.eprints.org/openaccess/policysignup/fullinfo.php?inst=Harvard%20University%20Faculty%20of%20Arts%20and%20Sciences. In an important advance on previous practice, instead of requiring academic authors to deposit their publications in the institutional repository themselves (which requires individual academic authors to assume responsibility for negotiating copyright interests with their publishers) Harvard's Faculty of Arts and Sciences obtains a licence from faculty authors which allows Harvard to deposit and make available faculty authors' publications on their behalf. Importantly, the Faculty of Arts and Sciences' policy also provides that any transfer of copyright to a publisher is subject to the licence granted by the faculty author to Harvard.

[840] Subsequently, the Kennedy School of Government, MIT, the Stanford School of Education and Harvard's Graduate School of Education (GSE) also endorsed open access policies.

[841] See the Technology Policy on the White House web site at http://www.whitehouse.gov/agenda/technology/.

issued a Presidential Memorandum on *Transparency and Open Government*, encouraging transparency in government and instructing US government agencies to err on the side of making information public.842 As part of the Obama administration's Open Government Initiative[843], the data.gov portal was launched in May 2009 providing access to large numbers of federal datasets, which are continually being added to.844 For example, machine-readable datasets may be accessed from the "raw" data catalogue, in a variety of formats (including XML, CSV/TXT, KL/KMZ and Esri) with accompanying metadata and analysed using tools available on the portal.

Key broad application public sector information policies, laws and developments

In keeping with these strong policy statements and commitments on open access to government information through an open internet and the online exchange of information, President Obama included in the priority business of his first day in office the issuing of a Presidential Memo on *Transparency and Open Government*. On 21 January 2009, President Obama issued a Presidential Memorandum on *Transparency and Open Government*. It states:

> MEMORANDUM FOR THE HEADS OF EXECUTIVE DEPARTMENTS AND AGENCIES
> SUBJECT: Transparency and Open Government
>
> My Administration is committed to creating an unprecedented level of openness in Government. We will work together to ensure the public trust and establish a system of transparency, public participation, and collaboration. Openness will strengthen our democracy and promote efficiency and effectiveness in Government.
>
> *Government should be transparent*. Transparency promotes accountability and provides information for citizens about what their Government is doing. Information maintained by the Federal Government is a national asset. My Administration will take appropriate action, consistent with law and policy, to disclose information rapidly in forms that the public can readily find and use. Executive departments and agencies should harness new technologies to put information about their operations and decisions online and readily available to the public. Executive departments and agencies should also solicit public feedback to identify information of greatest use to the public.
>
> *Government should be participatory*. Public engagement enhances the Government's effectiveness and improves the quality of its decisions. Knowledge is widely dispersed in society, and public officials benefit from having access to that dispersed knowledge. Executive departments and agencies should offer Americans increased opportunities to participate in policymaking and to provide their Government with the benefits of their collective expertise and information. Executive departments and agencies should also solicit public input on how we can increase and improve opportunities for public participation in Government.
>
> *Government should be collaborative*. Collaboration actively engages Americans in the work of their

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842 *Transparency and Open Government*, Memorandum for the Heads of Executive and Agencies, Office of the Press Secretary, The White House, 21 January 2009, available at http://www.whitehouse.gov/the_press_office/Transparency_and_Open_Government/. See also the Press Secretary's Statement of 21 January 2009 at http://www.whitehouse.gov/the_press_office/StatementfromthePressSecretaryonthePresidentssigningoftwoExecutiveOrdersandthreeMe/, accessed 14 July 2009.

843 See http://www.whitehouse.gov/open/ and http://www.whitehouse.gov/open/blog/ accessed 14 July 2009.

844 Following the launch strategically important datasets continue to be promptly and progressively uploaded, with Landsat Satellite data and the US Geological Survey (USGS) Oil and Gas Assessment Database being included in the datasets currently available. Additionally, the US Geological Survey's mineral resource database is available at http://www.data.gov/details/14.

Government. Executive departments and agencies should use innovative tools, methods, and systems to cooperate among themselves, across all levels of Government, and with nonprofit organizations, businesses, and individuals in the private sector. Executive departments and agencies should solicit public feedback to assess and improve their level of collaboration and to identify new opportunities for cooperation.

I direct the Chief Technology Officer, in coordination with the Director of the Office of Management and Budget (OMB) and the Administrator of General Services, to coordinate the development by appropriate executive departments and agencies, within 120 days, of recommendations for an Open Government Directive, to be issued by the Director of OMB, that instructs executive departments and agencies to take specific actions implementing the principles set forth in this memorandum. The independent agencies should comply with the Open Government Directive.

This memorandum is not intended to, and does not, create any right or benefit, substantive or procedural, enforceable at law or in equity by a party against the United States, its departments, agencies, or entities, its officers, employees, or agents, or any other person.[845]

"Open Government Directive, Phase III: Drafting", Office of Science and Technology Policy, Executive Office of the President (2009)

The Presidential memorandum on *Transparency and Open Government*, issued on 21 January 2009, required the Chief Technology Officer, the Director of the Office of Management and Budget (OMB) and the Administrator of General Services to, within 120 days, coordinate the development by appropriate executive departments and agencies of recommendations for an Open Government Directive to be issued by the Director of OMB.[846] From the outset, the White House approached the crafting of these recommendations in an open fashion. In the drafting phase, citizens were invited to collaborate on creating recommendations for an open government policy using a web-based wiki tool. Citizens were able to contribute recommendations and vote on drafts on selected topics (up to the end of June 2009).

US Copyright Act 1976, s105

§ 105 - Subject matter of copyright: United States Government works

Copyright protection under this title is not available for any work of the United States Government, but the United States Government is not precluded from receiving and holding copyrights transferred to it by assignment, bequest, or otherwise.[847]

Section 105 of the US *Copyright Act 1976* specifically and explicitly prohibits copyright protection for "any work of the US Government". The section makes it clear that, while copyright does not subsist in "any work of the United States Government",[848] the US federal government may

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[845] *Transparency and Open Government,* Memorandum for the Heads of Executive Departments and Agencies., 21 January 2009, available at http://www.whitehouse.gov/the_press_office/TransparencyandOpenGovernment/. See also See also the Press Secretary's Statement of 21 January 2009 at http://www.whitehouse.gov/the_press_office/StatementfromthePressSecretaryonthePresidentssigningoftwoExecutiveOrdersandthreeMe/, accessed 14 July 2009.

[846] See http://www.whitehouse.gov/the_press_office/TransparencyandOpenGovernment/.

[847] See http://www.copyright.gov/title17/92chap1.html#105 accessed 5 June 2009.

[848] For discussion of the operation of copyright and copyright management in relation to US government materials, see *CENDI, Frequently Asked Questions About Copyright – Issues Affecting the US Government,* Commerce, Energy, NASA, Defense Information Managers Group (CENDI), CENDI/2004-8, updated August 2007, available at

nevertheless own copyright. For example, where copyright in a work is transferred to the US Government, the work retains copyright and it can be exercised by the Government. A "work of the United States Government" is defined (in s 101) as a work prepared by an officer or employee of the US Government as part of the person's official duties. Exceptions to the rule in s 105 of the *Copyright Act* are provided for certain works of the National Institute for Standards and Technology (NIST) and the US Postal Service, which are copyrightable.[849]

Section 105 applies only to federal government works. It has no application in relation to the works of state and local governments which can, and often do, claim copyright in their publications. The absence of copyright protection for US federal Government works under s 105 of the *Copyright Act* does not create a requirement for all US Government works to be made publicly available without restriction. Rather, access to and re-use of US Government information is governed by federal legislation and policies.

"Office of Management and Budget's Circular A-130 on Management of Federal Information Resources", (OMB Circular A-130) (2000)

OMB Circular A-130[850] establishes the data access and reuse policy for executive branch departments and agencies of the United States federal Government. It sets out the conceptual basis of US federal Government's data access and reuse policy and consolidates provisions found in about 20 federal statues and orders. The Circular was initially issued on 28 November 2000 and is reviewable every three years.

OMB Circular A-130 applies to the information activities of all agencies of the executive branch of the US federal government (clause 4(a)), subject to the proviso that information classified for national security purpose should also be handled in accordance with the appropriate national security directives and national security emergency preparedness activities are to be conducted in accordance with Executive Order 12472 (clause 4(b)). "Government information" is defined to mean "information created, collected, processed, disseminated, or disposed of by or for the Federal Government" (clause 6(h)); "information" is defined as meaning "any communication or representation of knowledge such as facts, data or opinions in any medium or form, including textual, numerical, graphic, cartographic, narrative, or audiovisual form".

As well as acknowledging that government information is a valuable public resource and that the nation stands to benefit from the dissemination of government information, the Circular requires improperly restrictive practices to be avoided.

For extracts from the text of the OMB Circular A-130, see Appendix 1.

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http://www.cendi.gov/publications/04-8copyright.html.

[849] The *Standard Reference Data Act* provided an exception to section 105, Pub. L. No. 90-396, 82 Stat. 339. Section 6 of that Act amended title 15 of the United States Code by authorizing the Secretary of Commerce, at 15 U.S.C. 290e, to secure copyright and renewal thereof on behalf of the United States as author or proprietor "in all or any part of any standard reference data which he prepares or makes available under this chapter," and to "authorize the reproduction and publication thereof by others." See also section 105(f) of the Transitional and Supplementary Provisions of the Copyright Act of 1976, in Appendix A. Pub. L. No. 94-553, 90 Stat. 2541.

[850] Available at http://www.whitehouse.gov/omb/circulars/a130/a130trans4.pdf and http://www.whitehouse.gov/omb/circulars/a130/a130trans4.html. For background generally, see Wikipedia at http://en.wikipedia.org/wiki/OMB_Circular_A-130.

National Institutes of Health - Data Sharing Policy (2003, amended 2008)

The National Institutes of Health (NIH) has been dealing with issues of data access, intellectual property and licensing for many years. The NIH is the largest funder of basic biomedical research in the world (spending US$27 billion in the 2005 financial year).[851] In February 2003 it published a data sharing policy, which remained in place until the end of 2007 when the policy was strengthened by the enactment of the *Consolidated Appropriations Act* 2008 (Division G, Title II, Section 218 of Public Law 110-161) which introduced an open access mandate for publications resulting from research projects funded by the National Institutes of Health (NIH).[852] The NIH believes that data sharing promotes many of its research goals and is viewed as particularly important for unique data that cannot be readily replicated.[853] Data sharing allows scientists to expedite the translation of research results into knowledge, products, and procedures to improve human health. NIH takes the view that all data should be considered for data sharing.

Prior to the enactment of the *Consolidated Appropriations Act* 2008, the NIH had a "voluntary" policy dating back to 2003, to facilitate data sharing. Under the 2003 policy, investigators submitting a research funding application to NIH for $500,000 or more in any single year were expected to include a plan for sharing final research data for research purposes, or state why data sharing is not possible.[854] In Australia, the Australian Research Council adopted a very similar strategy to essentially require (without actually mandating) Australian researchers to deposit their research results and reports into an open access repository.

Harvard University Law School – Open Access mandate (2008)

In May 2008, the faculty of Harvard Law School unanimously voted to adopt an open access mandate[855] which requires each staff member's academic journal articles be made available in an open access repository:

> The Faculty of the Harvard Law School is committed to disseminating the fruits of its research and scholarship as widely as possible. In keeping with that commitment, the Faculty adopts the following policy: Each Faculty member grants to the President and Fellows of Harvard College permission to make available his or her scholarly articles and to exercise the copyright in those articles. More specifically, each Faculty member grants to the President and Fellows a nonexclusive, irrevocable, worldwide license to exercise any and all rights under copyright relating to each of his or her scholarly articles, in any medium, and to authorize others to do the same, provided that the articles are not sold for a profit. The policy will apply to all scholarly articles authored or co-authored while the person is a member of the Faculty except for any articles completed before the adoption of this policy and any articles for which the Faculty member entered into an incompatible licensing or assignment agreement before the adoption of this policy. The Dean or the Dean's designate will waive

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[851] See http://grants.nih.gov/grants/guide/notice-files/NOT-OD-08-033.html.

[852] See NIH, *Policy on Enhancing Public Access to Archived Publications Resulting from NIH-Funded Research,* 2005, at http://grants.nih.gov/grants/guide/notice-files/NOT-OD-05-022.html accessed 5 June 2009. For a comparison of the NIH Public Access Policy (2005-07) with the US Office of Education policy on copyright in funded research (1965-1970), see Jonathan Miller, *Publishers did not take the bait: A forgotten precursor to the NIH Public Access Policy.* A preliminary version of the paper was presented at the Florida Library Association Annual Conference, 23 April 2008, available at http://www.ala.org/ala/mgrps/divs/acrl/publications/crljournal/preprints/Miller.pdf.

[853] See http://grants.nih.gov/grants/policy/data_sharing/data_sharing_guidance.htm#enclave.

[854] This requirement is in place for all applications on or after 1 October 2003.

[855] Available at http://cyber.law.harvard.edu/node/4289.

application of the policy to a particular article upon written request by a Faculty member explaining the need. Each Faculty member will provide an electronic copy of the final version of the article at no charge to the appropriate representative of the Provost's Office in an appropriate format (such as PDF) specified by the Provost's Office no later than the date of its publication. The Provost's Office may make the article available to the public in an open-access repository.

The Office of the Dean will be responsible for interpreting this policy, resolving disputes concerning its interpretation and application, and recommending changes to the Faculty from time to time. The policy will be reviewed after three years and a report presented to the Faculty.[856]

Subsequently, the Kennedy School of Government, MIT, the Stanford School of Education and Harvard's Graduate School of Education (GSE) also endorsed open access policies. An article published in the Harvard Crimson on 20 June 2009 reported that the GSE had voted overwhelmingly in favour of making their scholarly articles available to the public free of charge:[857]

Under the new policy, faculty articles will now be circulated through the online Digital Access to Scholarship at Harvard [DASH] repository now being developed by the Office for Scholarly Communication. Though currently in testing stages and available only within the University, the database is expected to opened to the general public by late summer or early fall. Faculty members will have the option of blocking public access to articles they write.

Data.gov portal, US Government (2009)

In May 2009, the Data.gov portal was launched as part of the Obama administration's Open Government Initiative.[858] The portal provides access to datasets generated and held by the US federal government.[859] Data.gov enables US federal government datasets to be accessed from the "raw" data catalogue and mined using tools to which links are provided from the website. The "raw" data catalogue provides instant downloads of machine readable, platform-independent datasets which are available in a range of formats including XML, CSV/TXT, KML/KMZ, and Esri. Additional metadata for a dataset is provided when a user clicks on the name of the dataset.

The purpose of the website is to:

increase public access to high value, machine readable datasets generated by the Executive Branch of the Federal Government.[860]

A clear goal of the initiative is to promote participatory democracy through greater engagement between government and its citizens. As the website states:

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[856] See *Harvard Law faculty votes for 'open access' to scholarly articles*, Harvard Law School News, 7 May 2008, available at http://www.law.harvard.edu/news/2008/05/07_openaccess.php and http://www.law.harvard.edu/news/2008/05/07_openaccess.html accessed 5 June 2009.

[857] Niha S Jain, *Ed School Faculty Endorse Open Access,* Harvard Crimson, 20 June 2009 at http://www.thecrimson.com/article.aspx?ref=528505

[858] See http://www.data.gov. The portal was developed by the Federal CIO Council as an interagency Federal initiative. For more details see http://www.data.gov/faq. For the Open Government Initiative, see 858 See http://www.whitehouse.gov/open/ and http://www.whitehouse.gov/open/blog/ accessed 14 July 2009.

[859] See http://www.data.gov/about.

[860] Ibid.

> [p]ublic participation and collaboration will be one of the keys to the success of Data.gov. Data.gov enables the public to participate in government by providing downloadable Federal datasets to build applications, conduct analyses, and perform research.[861]

When first launched, only 47 government databases were available, but further databases have been added on a daily basis.[862] Within a couple of weeks of launch, the number of databases had already grown to almost 100. Examples of extensive datasets that can be downloaded from Data.gov are the Landsat Satellite data[863] and the US Geological Survey (USGS) Oil and Gas Assessment Database[864] and the USGS Mineral Resource Data System which includes descriptions of mineral resources throughout the world.[865]

Ca.gov - State of California data portal (2009)

Similar to the Obama administration's "Data.gov" initiative, the Californian Government has launched its own data portal which provides access to raw data files, databases, geographic data, and other data resources.[866] State data files, which include data such as air quality statistics, demographics projections and twitter feeds, are available in a variety of formats such as CSV, XLS, KML, TXT, and XM.[867] In turn, the site links to 26 different state databases, ranging from California ballot measures to travel and tourism data. Geographical data is made available via various GIS shapefiles, Google maps as well as XML, KML and ZIP files.[868] The top downloads from the website include demographics, health statistics, state contracts and traffic records.[869]

The website makes it clear that the data files can be reused by citizens and organizations for their own web applications and mashups. The portal provides easy access by allowing subscription to various topics via RSS feed or email list.[870] Citizens are invited by the website to provide feedback and suggest additional datasets to be included.[871]

Spatial information and the National Spatial Data Infrastructure (NSDI)

The National Spatial Data Infrastructure (NSDI)[872] is a physical, organizational, and virtual network designed to enable the development and sharing of the US digital geographic information

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[861] Ibid.

[862] For a comment on Data.gov upon launch, see A Madrigal, 'Data.gov launches to mixed reviews', *Wired*, 21 May 2009 at http://www.wired.com/wiredscience/2009/05/datagov-launches-to-mixed-reviews/.

[863] Land-surface images of the entire earth, each approximately 100mi. x 100mi., from 1972 to the present, in KMZ file format, available at http://www.data.gov/details/93.

[864] From 1995 to 2009, in Esri file format, available at http://www.data.gov/details/94.

[865] From 1996 on, in Esri file format, available at http://www.data.gov/details/14.

[866] See http://www.ca.gov/data/default.html.

[867] See http://www.ca.gov/data/state_data_files.html accessed on 26 June 2009.

[868] See http://www.ca.gov/data/geographic_data.html accessed on 26 June 2009.

[869] See http://www.ca.gov/data/default.html accessed on 26 June 2009.

[870] See http://www.ca.gov/multimedia_rss.html accessed on 26 June 2009. RSS or Really Simple Syndication is a format for delivering regularly changing Web content to users. The RSS feeds provide headlines and descriptions of content, along with links to the full articles.

[871] See http://www.ca.gov/data/default.html.

[872] See http://www.fgdc.gov/nsdi/nsdi.html.

resources.[873] It has been described as "the technology, policies, criteria, standards and people necessary to promote geospatial data sharing throughout all levels of government, the private and non-profit sectors, and academia".[874] It provides a base of practices and relationships among data producers and users that facilities data sharing and use. The NSDI was established with the aim of reducing duplication of effort among agencies, improving quality and reducing costs related to geographic information. As well as making geographic data more accessible to the public, the NSDI aims to increase the benefits of using available data and to establish partnerships among the government, academic and private sectors to increase data availability.

Numerous reports on the NSDI have been produced by the Federal Geographic Data Committee (FGDC).[875] They cover a range of topics including financing geographic information systems (GIS), assessing risks and security implications of publicly available geospatial information.

OMB Circular A-16 (as revised in 2002) explains the NSDI as follows:

> The NSDI assures that spatial data from multiple sources (federal, state, local, and tribal governments, academia, and the private sector) are available and easily integrated to enhance the understanding of our physical and cultural world. The NSDI honors several key public values:
>
> - Privacy and security of citizens' personal data and accuracy of statistical information on people, both in raw form and in derived information products.
>
> - Access for all citizens to spatial data, information, and interpretive products, in accordance with OMB Circular A-130.
>
> - Protection of proprietary interests related to licensed information and data.
>
> - Interoperability of federal information systems to enable the drawing of resources from multiple federal agencies and their partners.
>
> The NSDI supports and advances the building of a Global Spatial Data Infrastructure, consistent with national security, national defense, national intelligence, and international trade requirements. International compatibility is an important aspect of the NSDI. Federal agencies will develop their international spatial data in compliance with international voluntary consensus standards, as defined by Circular A-119.[876]

In 2005, the FGDC explained the NSDI as follows:

> **Why do we need geospatial data?**
>
> Government agencies and other organizations are frequently asked for quick responses to natural disasters, industrial accidents, environmental crises, and homeland security alerts. Much of the information needed to make sound decisions in such cases is based on geography. There is constant pressure to make wise decisions in a more cost effective and efficient manner. Accurate and current geospatial data are critical to these decisions.
>
> **How are geospatial data managed?**
>
> Geographic information systems (GIS) that facilitate spatial analysis play an increasing role in decision making at all levels of government and in private industry. GIS analyses, in turn, depend on the availability, quality, and compatibility of digital geographic data. Development of these data is normally the highest cost factor in

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[873] See GeoData.gov (US Federal, State and Local geographic data) at http://gos2.geodata.gov/wps/portal/gos.
[874] See http://www.fgdc.gov/nsdi/nsdi.html.
[875] Available at www.fgdc.gov/library/whitepapers-reports/index_html.
[876] See http://www.whitehouse.gov/omb/circulars_a016_rev/#appe.

the use of technology to address today's problems. Billions of dollars are invested annually in producing geospatial data. Many of these data collection activities are redundant—data already exist but they are hard to find, frequently undocumented, and in incompatible formats.
.....
The NSDI will provide a base or structure of relationships among data producers and users that will facilitate data sharing. The increased ability to share data through common standards and networks will, in turn, serve as a stimulus for growth.
….
Both the Executive Order [12906] and the recent OMB Circular [A-16] stress the importance of building partnerships to ensure effective development of the aforementioned efforts.

Building an effective NSDI will require a well-coordinated effort among Federal, tribal, State, local government, and academic institutions, as well as a broad array of private sector geographic, statistical, demographic, and other business information providers and users. Only through this cooperation will the NSDI become a reality.[877]

The benefits of the NSDI are described as follows in OMB Circular A-16 (as revised in 2002):

Spatial data is a national capital asset. The NSDI facilitates efficient collection, sharing, and dissemination of spatial data among all levels of government institutions, as well as the public and private sectors, to address issues affecting the Nation's physical, economic, and social well-being. A coordinated approach for developing spatial data standards that apply to collecting, maintaining, distributing, using, and preservation of data will improve the quality of federal spatial data and reduce the cost of derivative products created by federal and non-federal users. Applications using spatial data that adhere to FGDC standards enable cost effective public and private policy development, management, and operations.

Implementation of [OMB Circular A-16] is essential to help federal agencies eliminate duplication, avoid redundant expenditures, reduce resources spent on unfunded mandates, accelerate the development of electronic government to meet the needs and expectations of citizens and agency programmatic mandates, and improve the efficiency and effectiveness of public management.

Many applications are dependent upon accurate spatial data. The benefits of the NSDI for these applications include creating a more secure Nation. Some examples include the analysis and management of utility infrastructures, transportation, energy, emergency management and response, natural resource management, weather and climate analysis, disaster recovery, homeland defense, law enforcement, protection planning, public health and other civilian or military strategic issues. The seamless spatial information needed for these applications can range from highly detailed local data, such as the nature of specific hazardous material stored in a particular room of a single building, to the various data needed for real-time projection of the probable effects of natural disasters.[878]

The NSDI concept has been further extended to Global SDI (GSDI) and regional SDIs. At each level, SDIs provide a means of accessing geographic information through an online directory and distributed clearinghouse based on consistent standards and policies for data sharing.

The NSDI is driven by the Federal Geographic Data Committee (FGDC),[879] an interagency committee responsible for facilitating activities under Circular A-16 and implementation of the NSDI. It promotes the coordinated development, use, sharing, and dissemination of geospatial data on a national basis across the United States. The FGDC also plays a role in international spatial data infrastructure development. The FGDC was established by the Office of Management and Budget (OMB) under the 1990 revision of Circular A-16, *Coordination of Geographic Information*

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[877] FGDC, *The National Spatial Data Infrastructure – Fact Sheet*, February 2005, available at http://www.fgdc.gov/library/factsheets/documents/nsdi.pdf accessed 5 June 2009.
[878] See http://www.whitehouse.gov/omb/circulars_a016_rev/#1.
[879] See http://www.fgdc.gov.

and Related Spatial Data Activities, and re-chartered in the August 2002 revision of Circular A-16 which states its responsibilities as follows:

> The FGDC leads and supports the NSDI strategy, spatial data policy development, management, and operational decision making. The FGDC also aids geographic information system use, directs and facilitates national implementation of the system of Framework Data and other themes in the NSDI, implements the NSDI Clearinghouse, and advises federal and other spatial data users on their NSDI implementation responsibilities.[880]

The FGDC is a 19-member interagency committee composed of representatives from the Executive Office of the President, and Cabinet level and independent federal agencies. The Secretary of the Department of the Interior chairs the FGDC and the Deputy Director for Management, Office of Management and Budget, OMB, is the Vice-Chair. Numerous stakeholder organizations participate in FGDC activities representing the interests of state and local government, industry, and professional organizations. All US government agencies responsible for spatial data themes are required to be members of the FGDC. Since its inception, the FGDC has continued to develop and evolve its policy on public access to information with appropriate protections for the privacy and confidentiality of personal information in federal geospatial databases. OMB Circular A-16 encourages the FGDC to participate in building the Global Spatial Data Infrastructure (GSDI) along with its principal role in building the US NSDI.

The FGDC develops the NSDI through three major activities:

- establishment of a National Geospatial Data Clearinghouse, a distributed electronic network of data producers and users connected through the internet;

- development of standards for data documentation, collection and exchange, to enable data to be shared across organizational and jurisdictional boundaries on different hardware platforms and with many different software programs; and

- development of policies, procedures and partnerships to create a national digital geospatial data framework that would include important basic categories of data significant to a broad variety of users.

The components of the NSDI - data themes,[881] metadata, the National Spatial Data Clearinghouse, standards and partnerships – are explained in OMB Circular A-16 (as revised in 2002).[882]

"Executive Order 12906 - Coordinating Geographic Data Acquisition and Access: The National Spatial Data Infrastructure", President Clinton (1994)

In the National Information Infrastructure (NII) initiative in 1993, the Clinton administration proposed the concept of the "Information Superhighway", an advanced communications and information infrastructure. The National Spatial Data Infrastructure (NSDI) was regarded as central to the NII. Consequently, on 11 April 1994, President Clinton signed Executive Order 12906 which

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[880] See http://www.whitehouse.gov/omb/circulars_a016_rev/#1.
[881] For NSDI data themes, definitions and lead agencies, see Circular A-16, Appendix E at http://www.whitehouse.gov/omb/circulars_a016_rev/#appe.
[882] See http://www.whitehouse.gov/omb/circulars_a016_rev/#1.

called for the establishment of the NSDI,[883] to further accelerate spatial data sharing and standardisation. Executive Order 12906 called for the establishment of the NSDI, comprising the technologies, policies and people required to enable geospatial data to be shared throughout all levels of government, the private and non-profit sectors and the academic community. NSDI is defined in Executive Order 12906 as the:

> …technology, policies, standards and human resources necessary to acquire, process, store, distribute and improve utilization of geospatial data.

Executive Order 12906 established executive branch leadership for the development of the NSDI. The NSDI was created to focus on the coordination of the acquisition of, and the provision of access to, geographical data for various strategic purposes including transportation, community development, agriculture, emergency response, environmental management, and information technology. Its aims included improved stewardship of natural resources and protection of the environment.

The Executive Order called for the development of a National Geospatial Data Clearinghouse, which is a distributed electronic network of geospatial data producers and users connected through the internet, spatial data standards, a National Geospatial Data Framework and partnerships for data acquisition.

Executive Order 12906 led to great interest in SDI, resulting in numerous research projects on SDIs, the need for SDIs, SDI components and techniques for standardising existing ad hoc spatial data related infrastructures.

"Office of Management and Budget's Circular A-16, Coordination of Geographic Information and Related Spatial Data Activities", (OMB Circular A-16) (1953, revised 1967, 1990 and 2002)

Circular A-16, *Coordination of Geographic Information and Related Spatial Data Activities*,[884] provides direction for US federal agencies that produce, maintain or use spatial data directly or indirectly in carrying out their functions. It establishes the Federal Geographic Data Committee (FGDC) and provides the bases for a coordinated approach to developing the National Spatial Data Infrastructure (NSDI). It was originally issued by the Bureau of the Budget (now the OMB) on 16 January 1953 and has been revised on three occasions (1967, 1990 and 2002). Appended to Circular A-16 were Exhibits dealing with procedures for programming and coordinating federal Topographic Mapping Activities, National Atlas, Geodetic Control Surveys and International Boundaries. The background to Circular A-16 is explained in Appendix C, as follows:

> The purpose of the 1953 Circular was "to insure (sic) that surveying and mapping activities may be directed toward meeting the needs of federal and state agencies and the general public, and will be performed

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[883] Executive Order 12906, published in the April 13, 1994, edition of the Federal Register, Volume 59, Number 71, pp 17671-17674; and amended by Executive Order 13286, published in the March 5, 2003, edition of the Federal Register, Volume 68, Number 43, pp 10619-10633. For further information on the NSDI see http://www.fgdc.gov/nsdi/policyandplanning/executive_order and http://www.archives.gov/federal-register/executive-orders/pdf/12906.pdf.
[884] Circular A-16 as revised in 2002, see http://www.whitehouse.gov/omb/circulars_a016_rev/#appeuse.gov/omb/circulars_a016_rev/#2b1.

expeditiously, without duplication of effort." The original Circular references Executive Order No. 9094, dated March 10, 1942. This Executive Order directs the Director of the Bureau of the Budget to coordinate and promote the improvement of surveying and mapping activities of the Government. Furthermore, it passes on functions carried out by the Federal Board of Surveys and Maps, established by Executive Order No. 3206, dated December 30, 1919. Thus, the OMB is directed to make recommendations to agencies and to the President regarding the coordination of all governmental map making and surveying. Executive Order No. 3206 superseded an Executive Order, dated August 10, 1906, that granted advisory power to the United States Geographic Board to review mapping projects to avoid duplication and to facilitate standardized mapping.[885]

The first revision of Circular A-16 in May 1967 saw the addition of a new section on Responsibility for Coordination. It outlined the responsibilities of three federal departments (the Department of the Interior, the Department of Commerce and the Department of State).

The second revision, issued on 19 October 1990, expanded Circular A-16 to include not only surveying and mapping but also related spatial data activities including geographically referenced digital data. The origins of the US National Spatial Data Infrastructure (NSDI) can be traced back to 1990 when the Federal Geographic Data Committee (FGDC) was set up in response to Circular A-16. The FGDC was tasked with coordinating the dissemination, sharing and development of surveying, mapping and other related spatial data.

Circular A-16 was revised again in 2002 to reflect changes in geographic information management and technology, further describe the components of the NSDI and assign agency roles and responsibilities for the development of the NSDI. The 2002 revision of Circular A-16 reaffirmed the government's commitment to building the NSDI and called for continued improvements in spatial data coordination and the use of geographical data. It is based on an integrated infrastructure system approach, to support multiple government services and electronic government. It names the Deputy Director for Management of OMB as Vice-Chair of the FGDC.

The responsibilities and reporting obligations of US federal agencies are set out in section 8 of Circular A-16:

8. What are the federal responsibilities?

a. What are the general federal agency responsibilities?

In order to use federal resources wisely, and to build the NSDI, all agencies that collect, use, or disseminate geographic information and/or carry out related spatial data activities will, both internally and through their activities involving partners, grants, and contracts:

(1) Prepare, maintain, publish, and implement a strategy for advancing geographic information and related spatial data activities appropriate to their mission, in support of the NSDI Strategy. Annually report to OMB on your achievements relative to you strategies, and include spatial data assets within Exhibit 300 submissions (see OMB Circular A-11, sec. 300).

(2) Collect, maintain, disseminate, and preserve spatial information such that the resulting data, information, or products can be readily shared with other federal agencies and non-federal users, and promote data integration between all sources. Ensure that data information products and other records created in spatial data activities are included on agency record schedules that have been approved by the National Archives and Records Administration. These activities will adhere to appropriate standards and be conducted in accordance with existing regulations.

(3) Allocate agency resources to fulfill the responsibilities of effective spatial data collection,

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[885] Circular A-16, Appendix C, http://www.whitehouse.gov/omb/circulars_a016_rev/#appc.

production, and stewardship.

(4) Use FGDC data standards, FGDC Content Standards for Digital Geospatial Metadata, and other appropriate standards, documenting spatial data with the relevant metadata, and making metadata available online through a registered NSDI-compatible Clearinghouse node.

(5) Coordinate and work in partnership with federal, state, tribal and local government agencies, academia and the private sector to efficiently and cost-effectively collect, integrate, maintain, disseminate, and preserve spatial data, building upon local data wherever possible.

(6) Use spatial information to enhance electronic government initiatives, to make federal spatial information and services more useful to citizens, to enhance operations, to support decisionmaking, and to enhance reporting to the public and to the Congress.

(7) Protect personal privacy and maintain confidentiality fully consistent with federal policy and law.

(8) Support emergency response activities requiring spatial data in accordance with provisions of the Stafford Act and other governing legislation.

(9) Participate in determining, when applicable, whether data declassified pursuant to Executive Order 12951 can contribute to and become a part of the NSDI.

(10) Search all sources, including the National Spatial Data Clearinghouse, to determine if existing federal, state, local or private data meets agency needs before expending funds for data collection.

(11) Appoint a contact to coordinate with lead agencies for collection, acquisition, maintenance, or dissemination of the spatial data themes used by their organization.

b. How does my agency report spatial data assets within the budget and performance review process?

Before the obligation of funds, ensure that all expenditures for spatial data and related systems activities financed directly or indirectly, in whole or in part, by federal funds are compliant with the standards and provisions of the FGDC. All Information Technology systems which process spatial data should identify planned investments for spatial data and compliance with FGDC standards within the Exhibit 300 capital asset and business plan submission (see OMB Circular A-11, sec. 300).

c. What are the lead federal agencies for the NSDI data themes?

Certain federal agencies have lead responsibilities for coordinating the national coverage and stewardship of specific spatial data themes. The data themes in the NSDI, their description, and the responsible lead for each theme are listed in Appendix E. Lead agency responsibilities and new data themes may be added or altered by recommendation of the FGDC and concurrence by the OMB.

d. What are the responsibilities of lead federal agencies for the NSDI data themes?

(1) Provide leadership and facilitate the development and implementation of needed FGDC standards, especially a data content standard for each data theme. Agencies will assess existing standards, identify anticipated or needed data standards, and develop a plan to originate and implement needed standards with relevant community and international practices in accordance with OMB Circular A-119, consistent with or included in the plan described in section 8.d.(2) below.

(2) Provide leadership and facilitate the development and implementation of a plan for nationwide population of each data theme. Plans will include the development of partnership programs with States, Tribes, academia, the private sector, other federal agencies, and localities that meet the needs of users, address human and financial resource needs, identify needs for standards, metadata, and the Clearinghouse, and advance a timetable for the development of NSDI data themes.

(3) Under section 8.a of this Circular, will prepare goals that support the NSDI strategy and, as needed, collect and analyze information from users about their needs for spatial data, including these in strategies related to their theme responsibilities.

(4) Administratively:

> (a) Designate a point of contact within the lead agency who will be responsible for development, maintenance, coordination, and dissemination of data using the National Spatial Data Clearinghouse;

> (b) Provide a performance report, at least annually, that documents data theme activities and implementation status, including progress toward goals identified in 8.d.(1), 8.d.(2) and 8.d.(3) above.

> (c) Publish maps or comparable graphics online showing the current extent and status of the spatial data themes for which they have the lead, and encourage all other sources of data for those same themes to provide access to their data through the Clearinghouse. Leads will coordinate with those in charge of the Clearinghouse and always use FGDC specified Web mapping conventions; and

> (d) Identify and publish proven practices for the use and application of agency data sets.[886]

"The Changing Geospatial Landscape", National Geospatial Advisory Committee (NGAC) (2009)

In January 2009, the National Geospatial Advisory Committee (NGAC)[887] published a short report, *The Changing Geospatial Landscape*,[888] which describes and considers the significance of recent innovations in digital spatial technology and practice.

The NGAC was established by the Secretary of the Interior in January 2008 to provide advice and recommendations related to the management of federal and national geospatial programs. This diverse committee is comprised of 28 experts from all levels of government, academia and the private sector.

The NGAC reports to the Chair of the Federal Geographic Data Committee (Secretary of the Interior or designee). The scope and objectives of the NGAC are described in the NGAC Charter:

> The Committee will provide advice and recommendations related to management of federal and national geospatial programs, the development of the National Spatial Data Infrastructure, and the implementation of Office of Management and Budget Circular A-16 and Executive Order 12906. The Committee will review and comment upon geospatial policy and management issues and will provide a forum to convey views representative of non-federal stakeholders in the geospatial community.

In this white paper the NGAC intends:

> to describe the changes and advancements the community has witnessed over the past three-plus decades and to set a context from which in part we will base our future deliberations. While this paper is not meant to be all-inclusive in chronicling the growth of the industry, we do believe it captures the major milestones and identifies several of the major issues that lie ahead.[889]

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[886] Circular A-16, Section 8, http://www.whitehouse.gov/omb/circulars_a016_rev/#8.
[887] See http://www.fgdc.gov/ngac.
[888] National Geospatial Advisory Committee, *The Changing Geospatial Landscape,* January 2009, available at http://www.fgdc.gov/ngac/NGAC%20Report%20-%20The%20Changing%20Geospatial%20Landscape.pdf.
[889] Ibid, Preface, p 2.

After setting out these major changes and upheavals in digital spatial technology and practice, from the internet to detailed digital mapping and to global positioning systems to Google and Microsoft and many others, the NGAC forms the firm view that the role of government has shifted during this period from being a data producer to coordinator, partnership facilitator, and manager. There are important consequences and challenges arising from this change, including a shift from relevant data generally being in the public domain to a more proprietary or commercial focused approach.

The NGAC sets out its clear views on how the federal government, through new practices, appropriate recognition of various stakeholders, updated spatial data policies to support a robust spatial data infrastructure, and coordinated investment, can best respond to the present major challenges:

> Government-based geographic information providers can no longer think of themselves as a player outside of or immune from the community of private sector, state, local or even public stakeholders. In many cases these stakeholders have embraced technology and processes which have rapidly outpaced anything the federal government can provide. At a minimum, what is needed is a commitment to improved spatial data, recognition of the place of multiple stakeholders in this brave new world, and coordinated investment.

> …[despite the various fascinating applications developed].. the greatest value of the spatial data infrastructure still lies in illuminating complex policy problems. If we as a country are sincere about resolving universal concerns such as global warming, sea level rise, and affordable health care, the Federal government needs to adopt innovative policies supporting a dynamic and robust spatial data infrastructure, an initiative that was promised more than 15 years ago. The members of the National Geospatial Advisory Committee look forward to working with the Obama Administration and the geospatial community in formulating recommendations on the adoption and or revision of spatial data policies and programs that can empower better decision-making through geography at all levels of government and in private enterprise.[890]

"Strategic Framework for the NSDI: The States' Perspective on Advancing the National Spatial Data Infrastructure", National States Geographic Information Council (NSGIC) (2008)

The *Strategic Framework for the NSDI: The States' Perspective on Advancing the National Spatial Data Infrastructure* sets out the views of the National States Geographic Information Council (NSGIC) on the actions that should be taken nationally to build the National Spatial Data Infrastructure (NSDI).[891]

The NSDI was initiated by Presidential Executive Order fifteen years ago, but to date remains incomplete. The NSGIC considers that government agencies must be encouraged to work together to fully implement the NSDI. The report sets out the following summary of the NSGIC's strategic recommendations:

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[890] Ibid, p 13.

[891] National States Geographic Information Council, *Strategic Framework for the NSDI* (10 October 2008), available at http://www.nsgic.org/resources/strategic_framework_NSDI_NSGIC.pdf. See also http://www.nsgic.org/about/index.cfm for its membership details which:

> include senior state geographic information system (GIS) managers and coordinators. Other members include representatives from federal agencies, local government, the private sector, academia and other professional organizations. A rich and diverse group, the NSGIC membership includes nationally and internationally recognized experts in geospatial information technologies, data creation and management as well as information technology policy.

1. Refresh and fully implement the 'Fifty States Initiative' and partnership guidelines for all sectors.
2. Establish an NSDI governance structure with equitable participation and responsibility for all sectors
3. Implement a 'For the Nation Initiative' implementation strategy to create nation -wide, authoritative core data
4. Fund the NSDI in a way that compels adherence to NSDI requirements.
5. Develop a strategic communication and advocacy agenda that all participants can use
6. Implement a technology strategy based on proven technology, and standard designs and data models.[892]

The unified vision for the NSDI is that it will be:

> a collaborative environment in which all government agencies that collect, manage, or use geospatial data do so in a way that facilitates data integration, sharing and access.[893]

The guiding principles to provide a foundation for achieving this unified vision are expressed as follows:

1. Business drivers will guide NSDI development
2. Data are a primary orientation of the NSDI
   - Build data once, use them many times
   - Data stewardship is essential
   - Data recognized as authoritative should form the foundation of the NSDI
   - **Core datasets are freely available and readily accessible**
3. Broad-based coordination and collaboration is critical
   - Partnerships are the key mechanism for NSDI development
   - All levels of government will be fully involved
   - The costs of implementing NSDI will be shared by all levels of government[894]

One of the NSGIC's strategic recommendations involving action by the federal and state governments is that as the OMB Circular A-16 is being implemented its relationship to 50+ Statewide Spatial Data Infrastructures (SSDIs) must be fully implemented and maintained at all times. The recommendations extend to refreshing and enhancing the "50 States Initiative" to more closely reflect the SSDI approach including performance measures, the development of criteria and requirements for interstate coordination to ensure a national approach, and assistance to other spatial sectors to develop NSDI participation guidelines.[895]

Reflecting the lack of engagement by the private sector in the NSDI, the NSGIC observes that:

> The entire geospatial community must also have incentives to participate in the strategies being developed and be willing to support their implementation.[896]

Importantly the NSGIC states that in order to accelerate the building of the NSDI priority needs to be given to the core data layers with a realistic implementation pathway being set, in turn, for each of these.

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[892] National States Geographic Information Council, *Strategic Framework for the NSDI* (10 October 2008), pp 7-8, available at http://www.nsgic.org/resources/strategic_framework_NSDI_NSGIC.pdf.
[893] Ibid, p 7.
[894] Ibid.
[895] Ibid, p 2.
[896] Ibid, p 8.

Topologically Integrated Geographic Encoding and Referencing system (TIGER), US Census Bureau

The US Census Bureau makes extracts of selected geographic and cartographic information from its strategically important MAF/TIGER® (Master Address File / Topologically Integrated Geographic Encoding and Referencing) database available in the form of TIGER/Line®Shapefiles.

The Bureau's website contains a frequently asked questions (FAQ) section to inform users about various aspects of the files and their history.[897] For example, the answer to question 26 explains that whilst the shapefiles do not contain demographic data users may download demographic data separately and then if they wish incorporate it into the shapefiles. The Census Bureau demographic data is available through American FactFinder.

Although the TIGER/Line Shapefiles may be freely reproduced as they are not protected by copyright under US copyright law, TIGER® and TIGER/Line® are registered trademarks of the U.S. Census Bureau.[898] The TIGER/Line Shapefiles are available for downloading**.**[899]

"The 1994 Plan for the National Spatial Data Infrastructure: Building the Foundation of an Information based Society", Federal Geographic Data Committee (FGDC) (2004)

The 1994 Plan for the National Spatial Data Infrastructure: Building the Foundation of an Information based Society[900] addressed a variety of activities to be carried out by the Federal Geographic Data Committee (FGDC), by federal, state, and local government agencies, and by members of the non-public sectors to fully develop the National Spatial Data Infrastructure (NSDI).

The FGDC's description of the NSDI is:

> an umbrella under which organizations and technology interact to foster more efficient use, management, and

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[897] See http://www.census.gov/geo/www/tiger/faq.html accessed on 3 April 2009.
[898] http://www.census.gov/geo/www/tiger/faq.html, accessed on 3 April 2009. The answer to question 38 is as follows:
38. Are the TIGER/Line Shapefiles copyrighted? Can I reproduce them?
By law, Title 17 U.S.C., Section 105, copyright protection is not available for any work of the United States Government. Thus, the Government is precluded from copyrighting its publications. Consequently, you are free to reproduce census materials as you see fit. However, TIGER® and TIGER/Line® are registered trademarks of the U.S. Census Bureau; ZCTA™ is also a trademark of the U.S. Census Bureau. As such, these names cannot be used as or within the proprietary product names of any commercial product including or otherwise relevant to U.S. Census Bureau data, and may only be used to refer to the nature of such product. The U.S. Census Bureau requests that any repackaging of the TIGER/Line Shapefile data (and documentation) and other files accompanying it for distribution include a conspicuously placed statement to this effect on the product's cover, the first page of the website, or elsewhere of comparable visibility. Further, U.S. Census Bureau trademarks, when used in reference to the nature of the product, should be accompanied by the ® (registered) symbol or ™ symbol.
[899] Ibid. See the answer to question 39. Downloads are via http://www2.census.gov/cgi-bin/shapefiles/national-files, accessed on 3 April 2009.
[900] Federal Geographic Data Committee, *The 1994 Plan for the National Spatial Data Infrastructure: Building the Foundation of an Information based Society* (March 1994) p 1, http://www.fgdc.gov/policyandplanning/NSDI%20Strategy%201994.pdf.

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production of geospatial data.[901]

The report indicates that ultimately the success or otherwise of the NSDI will depend on the ability to build and maintain partnerships among the federal, state and local levels of government, and the private sector.[902]

"Geographic Information for the 21st Century: Building a Strategy for the Nation", National Academy of Public Administration (NAPA) (1998)

The study, *Geographic Information for the 21st Century: Building a Strategy for the Nation*,[903] prepared by a panel formed by the National Academy of Public Administration (NAPA) in 1998, examined the spatial data operations of the requesting agencies (the Bureau of Land Management, the U.S. Geological Survey, the U.S. Forest Service, and the National Ocean Service) and the activities of the Federal Geographic Data Committee (FGDC).

The report's most significant recommendation was that Congress create a new private, nonprofit structure, termed the National Spatial Data Council (NSDC), to serve as a forum for all organizations engaged in developing and maintaining geographic data. It further recommended the merging of some federal geographic information activities and that the NSDC guide the establishment and maintenance of a National Spatial Data Infrastructure (NSDI). The Infrastructure represents an emerging network of materials, technology, and the entities and individuals necessary to acquire, process, store, and distribute geographic data.

"National Spatial Data Infrastructure (NSDI) Phase I Report", Federal Geographic Data Committee (FGDC) (2001)

As a result of the National Spatial Data Infrastructure (NSDI) not attracting the level of private sector participation anticipated when the NSDI was first established in 1994, a private sector trade association, the Spatial Technologies Industry Association (STIA) was funded to examine and report on ways to increase private sector participation.

In summary, this phase 1 project report:[904]

- Reviews the authorities establishing the NSDI Initiative and the assumptions made at the outset by the public sector with respect to private sector participation in the NSDI;
- Examines and validates the low private sector participation in the NSDI to date and suggests reasons for the lack of private sector involvement;
- Identifies private sector drivers (motivators) to participation in the NSDI;

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[901] Ibid, p 1.

[902] Ibid.

[903] National Academy of Public Administration, *Geographic Information for the 21st Century: Building a Strategy for the Nation* (15 January 1998), http://71.4.192.38/NAPA/NAPAPubs.nsf/17bc036fe939efd685256951004e37f4/e0770f7de2cf486885256cad00500106?OpenDocument. NAPA (headquartered in Washington, D.C.) is an independent, non-profit, nonpartisan organization chartered by Congress in 1967 to assist federal, state, and local governments improve performance.

[904] Phase I Report, http://www.fgdc.gov/library/whitepapers-reports/sponsored-reports/stia/stia_sec_2.doc.

- Summarizes impediments to achieving the goal of the NSDI; and
- Offers subsequent activities to address the findings in this first phase report and to develop processes and programs supporting private sector growth in participation in the NSDI.[905]

STIA provides certain reasons why in its view the anticipated private sector engagement did not materialise:

> During the period 1994 - 2000, a pronounced growth occurred in private sector digital mapping and data collection, creating for the first time a healthy private sector mapping business community. While the private sector was addressing end-user needs in the marketplace, the expectations of the NSDI program for the private sector spatial technologies industry, as expressed in the National Performance Review, were unrealistic in terms of financial contribution and were not articulated clearly as to what was meant by private sector cooperation.[906]

> **Conclusions**
>
> - NSDI must address private sector interests and accommodate the private sector's role
> - NSDI must complement the private sector's activities
> - NSDI lacks a business plan focused on action not process
> - Multiple NSDI and NSDI related activities at the Federal level confuse the private sector marketplace
> - Knowledge of NSDI offerings and advantages to the private sector are lacking
> - The NSDI must address demand factors in the marketplace – both public sector and private sector
> - Security and availability of information needs to be improved
> - NSDI must address scale and accuracy of data[907]

"Report on a comparative analysis of NSDIs in Australia, Canada and the United States", Ian Masser, GINIE (2002)

An objective of the *Report on a comparative analysis of NSDIs in Australia, Canada and the United States*[908] was to compare European experience with spatial data infrastructures (SDI) to the rest of the world. This was undertaken by examining three leading nations in the field (Australia, Canada and the United States), focusing on the kinds of coordinating framework that have emerged outside Europe and the different approaches that have been adopted towards the phased implementation of SDIs.

The findings of this study highlight some of the ways in which thinking about SDIs developed in these countries with reference to certain criteria: objectives, coordinating bodies, resources, role of industrial organisations, data availability and the emergence of new types of organisation.

In the course of the comparative analysis, Masser comments on the particular challenges presented by the highly decentralised US environment:

> One of the most distinctive features of the United States is the large number of agencies involved in creating

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[905] Ibid, p 2-5.

[906] Ibid, p 2-6.

[907] Ibid.

[908] Ian Masser, GINIE: Geographic Information Network in Europe, *Report on a comparative analysis of NSDI's in Australia, Canada and the United States*, October 2002, *www.ec-gis.org/ginie/doc/SDIComparative_report_Final.pdf* accessed on 5 June 2009.

geographic information. As might be expected, given the federal structure of the US government, many important responsibilities for geographic information are dealt with at the state and local government level and there are wide variations between states in the way that these responsibilities are carried out. Particularly important from this standpoint are land titles registration and land taxation matters that rest with local governments in each state. As a result over 80,000 agencies including 50 states, more than 3000 counties and 7000 cities are involved in some way with geographic information creation (see Masser, 1998 and GINIE, 2002).[909]

"National Land Parcel Data: A Vision for the Future", National Research Council of the National Academy of Sciences (Mapping Science Committee), (2007)

The report, *Land Parcel Databases: A National Vision*,[910] by the National Research Council (NRC) was prepared at the request of five organisations (the Bureau of Land Management, the Federal Geographic Data Committee (FGDC), the Department of Homeland Security, the Census Bureau, and the Environmental Systems Research Institute) to re-assess the vision for land parcel data, as set out in the 1980 NRC report, *Need for a Multipurpose Cadastre*.

The primary audience being addressed in the report is described by David J. Cowen, the Chair of the NRC Study Committee preparing the report, as:

> those organizations that create and use land parcel data, and in particular those U.S. government agencies that play a role in coordinating and funding national land parcel data and other related themes of the National Spatial Data Infrastructure.[911]

The NRC made nine recommendations designed to establish a partnership-focused framework as the first practical step towards a US national land parcel data program.

"The Public Sector, the Private Sector and Data Products in the US", Joanne Gabrynowicz (2006)

In 2006, Joanne Gabrynowicz, Director of the National Center for Remote Sensing, Air, and Space Law at the UM (University of Mississippi) School of Law[912] delivered a presentation

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[909] Ibid, p 10.

[910] National Research Council of the National Academy of Sciences (Mapping Science Committee), *National Land Parcel Data: A Vision for the Future*, National Academies Press, Washington (2007), available at http://books.nap.edu/openbook.php?record_id=11978&page=155 accessed 5 June 2009.

[911] Ibid, Preface, p xii, available at http://books.nap.edu/openbook.php?record_id=11978&page=R12 accessed 5 June 2009.

[912] See http://www.spacelaw.olemiss.edu. The National Center for Remote Sensing, Air and Space Law addresses and conducts research, education and outreach activities related to the legal aspects of applying remote sensing, air, and space technologies to human activities. Space, remote sensing and aviation subjects that the Center addresses include, among others:
- Data Policies
- Privacy
- International Law
- Use of Imagery as Legal Evidence
- Intellectual Property
- Liability
- Environmental Issues

entitled "The Public Sector, the Private Sector and Data Products in the US"[913] to the National Remote Sensing Agency at Hyderabad, India. Considering data issues in the context of the *US Land Remote Sensing Policy Act,* Gabrynowicz made the point that the data access spectrum stretches between the public sector (generally providing unenhanced data) and the private sector (providing value added data). She notes that:

> [w]hat [data] is appropriate for government to provide and what is appropriate for the private sector to provide has changed over time.[914]

Gabrynowicz expresses the view that with significant technological capabilities and competencies now evident in the private sector, government should focus upon maintaining core competencies relevant to the inherently government roles of providing access to and archiving data rather than embarking on value adding activities. Such activities are more appropriately left to the private sector to undertake.

"The Earth Observer", NASA (2008)

In August 2008, NASA announced in *The Earth Observer* that, as from February 2009, all government data from the Landsat series of Earth Observation Satellites would be made available over the internet, free of charge.[915]

As required by P.L. 102-555, this Data Policy Plan is designed to achieve the following objectives:

- ensure that unenhanced data are available to all users at the cost of fulfilling user requests;
- ensure timely and dependable delivery of unenhanced data to the full spectrum of civilian, national security, commercial, and foreign users and the National Satellite Land Remote Sensing Data Archive (NSLRSDA);
- ensure that the United States retains ownership of all unenhanced data generated by Landsat 7;
- support the development of the commercial market for remote sensing data;
- ensure that the provision of commercial value-added services based on remote sensing data remains exclusively the function of the private sector; and
- to the extent possible, ensure that the data distribution system for Landsat 7 is compatible with the Earth Observing System Data and Information System (EOSDIS).

The fundamental concept in the Landsat 7 data distribution policy is non-exclusivity. Access to Level OR data is to be provided on a non-discriminatory basis to any requester within the technical limitations of the system. Although the US Government retains ownership and all rights to the Level OR data, no restrictions are imposed on subsequent use, sale, or redistribution of data from Landsat 7.

- Licensing.

[913] See http://www.spacelaw.olemiss.edu/activitiesandevents/2006/Public,_Private_and_Data_Products.pdf accessed 5 June 2009.

[914] Ibid.

[915] NASA, *The Earth Observer,* Washington DC, 2008, Vol 20, Issue 3, at p 3. See US Landsat 7 Data Policy Data Policy Plan, established by USGS and NOAA, October, 1994, http://www.codata.org/data_access/policies.html#Landsat%207.

Consistent with P.L. 102-555, Landsat data is to be provided to all requesters on a non-discriminatory basis at the "cost of fulfilling user requests" (COFUR). COFUR is defined in P.L. 102-555 as "the incremental costs associated with providing product generation, reproduction, and distribution of unenhanced data in response to user requests and shall not include any acquisition, amortization, or depreciation of capital assets originally paid for by the United States Government or other costs not specifically attributable to fulfilling user requests."

"The Evolution of Geospatial Technology Calls for Changes in Geospatial Research, Education and Government Management", Prof. Mike Jackson, David Schell and Prof. D.R. Fraser Taylor (2009)

In the article *The Evolution of Geospatial Technology Calls for Changes in Geospatial Research, Education and Government Management,*[916] the authors recognise the full potential of evolving geospatial technology "the geospatial technology revolution" to break down traditional barriers between the various academic disciplines and lead to genuine geospatial interoperability which will greatly benefit humanity. The core question posed by the authors is stated as follows:

> Just as the significance of the Web could not be widely appreciated until the necessary Web standards had been in place for a few years, we believe that all the domains of geospatial technology and application are about to experience a remarkable transformation due to global adoption of open standard geospatial Web service interfaces and encodings. The rich "network effects" made possible by chained Web services, GRID computing, sensor webs, geospatial semantics, and online catalogs for data, services and schemas hold great promise, but there is no guarantee that this promise will be fulfilled. The question is, can we find the institutional will - in academia and government - to make changes that enable societies around the world to make the most of these new tools?[917]

Whilst considering how best to bring about necessary reforms in geospatial research practices, traditional academic disciplines and government management practices to date, the authors address the issue of open access to geospatial data. The ability under open access for greater levels of re-use is identified as a key benefit or enabler provided certain consistent information management processes are used. The authors state:

> **3. Open Access to Geospatial Data**
>
> Academics and those who fund their research should be acutely interested in the proposition that geospatial data developed for scientific purposes can be, in a Web environment, a resource whose value increases with the number of researchers who use it. Geography has always been interdisciplinary and GIS has always been a tool for combining data from different sources. All geodata refers to some aspect of the same Earth. If researchers properly document, archive and publish their data and methodologies using available Web technologies, standards and best practices, many benefits accrue...[918]

The significance of recent senior appointments made by the Obama administration for the advancement of open access principles for government across the traditional disciplines is noted as follows:

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[916] Prof. Mike Jackson, David Schell and Prof. D.R. Fraser Taylor, *'The Evolution of Geospatial Technology Calls for Changes in Geospatial Research, Education and Government Management'*, Directions Magazine (6 April 2009) http://www.directionsmag.com/article.php?article_id=3092 accessed 5 June 2009.
[917] Ibid.
[918] Ibid.

> Geospatial academics worldwide ought to note also the significance to the research community taken by the recently installed Obama administration in the US, which has resulted in the appointment as co-chairs of the President's Council of Advisors on Science and Technology Harold Varmus, co-founder of the Public Library of Science and former director of the US-NIH, and Eric Lander, a lead researcher in the Human Genome Project and founding director of the Broad Institute (a joint MIT and Harvard institute which addresses the effectiveness of "a new, collaborative model of science focused on transforming medicine)". Varmus is one of the most high-profile advocates of Open Access and the role of government in providing open access, and both the Human Genome Project and the Broad Institute are practitioners of open data. **In this context, is it not then obvious and provocative to consider the potential importance to geospatial information science of recognizing the GEOSS (Global Earth Observation System of Systems), within the US federal government as well as the world scientific community, to be an initiative that is similar to and as important as the Human Genome project?**[919] [emphasis added]

On the need for a new approach in educational practices the authors consider how the challenges may be effectively addressed:

> **4. Academia can accelerate and guide geospatial technology evolution.**
>
> The authors support a movement toward Open Access in all the sciences that produce and use geospatial data. But in addition to Open Access, the authors seek a concerted global effort to study and evolve interoperability to make geospatial data and services a more important part of the rapidly evolving ICT environment, which is to say, to build a better connection between the real world and the digital world…
> ……
>
> The authors believe that new research centers must be created and existing mathematics, computer science, geography and human factor departments must create new subspecialties or new programs to explore and invent new information systems focused on terrestrial features and phenomena, space, and time. Computer science per se is too abstract to subsume the work we describe. The new discipline needs to be anchored to geodesy, positioning and location-aware technology, and it needs to co-evolve with the open standards framework for geospatial interoperability. The new discipline is a discipline for the study and advancement of processing that is bound to the physical and social environment that we live our daily lives in.[920]

As part of the necessary overall reform agenda the authors express the view that the current allocation of public administration responsibilities does not best address pressing present needs:

> In 1990, the FGDC, with its symbolic positioning as the focus for US Federal Government geospatial processing, was housed in the US Department of the Interior (DOI). Nineteen years later, after years of technology development and experience with the realities of coordinating the government's vastly diverse spatial information management requirements across nearly all departmental boundaries, it seems relevant to re-examine the organizational positioning of this vital function. Such a re-examination is particularly urgent in light of geoprocessing's increased relevance to comprehensive, multidisciplinary government programs, and of equal importance, in recognition of the increasingly integral definition of standards-based "Interoperability Science" as distinct from the compilation of discipline-specific data repositories.
>
> This is not just a US issue [but rather an issue for all governments worldwide].[921]

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[919] Ibid.
[920] Ibid.
[921] Ibid.

Other publications: science data, scholarly works or geospatial information, including economic and pricing issues

There is a growing body of literature in the US on access to information and its impact on innovation. Through the US literature, whether general[922] or addressing specific kinds of information (e.g. science data, academic publications or geospatial information) there is strong support for open access with pricing (if any) set at no more than the cost of distribution.

"Borders in Cyberspace: Conflicting Public Sector Information Policies and their Economic Impacts", Peter Weiss (2002)

In an influential article entitled *Borders in Cyberspace: Conflicting Public Sector Information Policies and their Economic Impacts*[923] published in 2002, the (late) Peter N. Weiss, of the U.S. National Weather Service, considered economic research which supported the advantages of facilitating access to and reuse of PSI. The report examines the fundamental differences in the access and use policies, and related funding models, adopted for public sector information in the US and Europe. The access policy adopted in the US is referred to as open access whilst the policy in place in Europe is called cost recovery.[924]

In the course of his analysis of the two fundamentally different schools of thought on access, Weiss refers to research work undertaken by the US National Academy of Sciences which examined the practices of commercialized government agencies in Europe, and US experiences with privatization of environmental data. The study identified the restrictive access impact of these practices and concluded:

> Countries that exercise intellectual property rights over government data…limit the extent to which government-collected data can be used, even in international collaborations. By making it more difficult to integrate global data sets and share knowledge, such a commercialization policy will fail to achieve the maximum benefits provided by international collaboration in the scientific endeavor.[925]

The case studies examined by Weiss in *Borders in Cyberspace* include failed cost recovery initiatives in the United States and limitations on cost recovery in Europe (citing examples in the (UK) Ordnance Survey, (UK) Met Office, Deutscher Wetterdienst, European Centre for Medium

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[922] For example, books by Professor Henry Chesbrough of the University of California at Berkeley – "Open Innovation" and "Open Business Models", which were discussed in the article *The love-in,* The Economist, 11 October 2007 at http://www.economist.com/surveys/displaystory.cfm?story_id=9928227, accessed on 3 April 2009.

[923] Peter Weiss, *Borders in Cyberspace: Conflicting Public Sector Information Policies and their Economic Impacts* (February 2002) available at http://www.weather.gov/sp/Borders_report.pdf accessed 5 June 2009.

[924] See James Boyle, *The Public Domain: Enclosing the Commons of the Mind*, Yale University Press, New Haven & London (2008) at p 221, http://thepublicdomain.org/thepublicdomain1.pdf: In his recent work *The Public Domain*, James Boyle also addresses these two fundamentally different schools of thought on access to public sector information. Boyle assesses the analysis by Peter Weiss in *Borders in Cyberspace* in the following glowing terms:
> I have been studying the issue [of access and use policy] for fifteen years, and if I had to suggest a single article it would be the magisterial study by Peter Weiss called "Borders in Cyberspace," published by the National Academies of Science. Weiss shows that the U.S. approach generates far more social wealth [than the so-called cost recovery European approach]. (at p 221)

[925] Committee on Geophysical and Environmental Data, Board on Earth Sciences and Resources, Division on Earth and Life Studies, National Research Council, *Resolving conflicts arising from the privatisation of environmental data,* Washington, DC, National Academy Press, 2001, p 6.

Range Weather Forecasting and Meteo France) as well as recent developments in Finland, UK, Germany and The Netherlands. On the basis of this analysis the author expresses the view that:

> …recognition is slowly emerging in Europe that open access to government information is critical to the information society, the scientific endeavour, and economic growth. However, recent trends towards more "liberal" policies face opposition. This comes from treasuries as well as from entrepreneurial civil servants in charge of "government commercialization" initiatives, who are sometimes tempted to engage in anti-competitive practices. Therefore, these issues require consideration at the highest policy making levels of government.

> Recognizing the scale of the opportunity presented, and the speed of enabling technological change, the US and the EU should commit to move forward together to take the practical steps necessary to establish internationally harmonized open and unrestricted data policies for all public sector information.[926]

In the course of examining a core issue relevant to government information policy[927] - the appropriate role of government in the context of competition between government and the private sector - Weiss refers with approval to the US National Academy's work on the privatisation of environmental data.[928] Weiss observes:

> The larger public policy issue behind public sector information policies is whether or not commercial government activities that compete with the private sector are proper for a government agency funded primarily by the taxpayers. In 1995, European national meteorological services prevailed in the World Meteorological Organization on the issue of replacing the organization's previous policy of full and open exchange of meteorological information with a procedure (WMO Resolution 40, CgXII), which sanctions charging and use restrictions on broad categories of data. In the words of the National Academy's "Privatization" study…:

>> "The change of policy was aimed at preventing private sector entities from competing with national meteorological services in Europe, which recoup costs through sales of data and services… WMO Resolution 40 substantially decreased the amount of data member nations made freely available." [929]

Weiss comments on the adverse operational impact of WMO Resolution 40 on researchers at the India Institute of Technology.[930] When charges are applied to meteorological data:

> basic research on monsoon prediction at the India Institute of Technology is hampered by the unaffordable prices for historic atmospheric model data from the European Centre for Medium-Range Weather Forecasting. As a result, the researchers are not able to integrate the European data with freely available US data.[931]

On the basis of the operational outcomes of the European access policy as illustrated in this Asian case study,[932] the Academy recommended:

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[926] Peter Weiss, *Borders in Cyberspace: Conflicting Public Sector Information Policies and their Economic Impacts* (February 2002) p 18, available at http://www.weather.gov/sp/Borders_report.pdf accessed 5 June 2009.

[927] Ibid, p 9.

[928] Committee on Geophysical and Environmental Data, Board on Earth Sciences and Resources, Division on Earth and Life Studies, National Research Council, *Resolving conflicts arising from the privatisation of environmental data,* Washington, DC, National Academy Press, 2001.

[929] Peter Weiss, *Borders in Cyberspace: Conflicting Public Sector Information Policies and their Economic Impacts* (February 2002) available at http://www.weather.gov/sp/Borders_report.pdf: at page 9 of his work Weiss refers to three recent examples from Switzerland, Germany and Finland as validating the Academy's view.

[930] At p 6.

[931] Goswami, et al "Association between quasi-biweekly oscillations and summer monsoon variabilities", Indian Meteorological Society (March 2001).

[932] This example is referred to by Peter Weiss, *Borders in Cyberspace: Conflicting Public Sector Information Policies and their Economic Impacts* (February 2002) p 5, available at http://www.weather.gov/sp/Borders_report.pdf

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- Environmental information created by government agencies to serve a public purpose should be accessible to all. To facilitate further distribution, it should be made available at no more than the marginal cost of reproduction, and should be usable without restriction for all purposes.

- The practice of public funding for data collection and synthesis should continue, thereby focusing contributions of the private sector primarily on value-added distribution and specific observational systems.[933]

"Harnessing the Power of Digital Data for Science and Society", Report of the Interagency Working Group on Digital Data to the Committee on Science of the National Science and Technology Council (2009)

The report by the Interagency Working Group on Digital Data to the Committee of the National Science and Technology Council Committee (IWGDD), *Harnessing the Power of Digital Data for Science and Society*,[934] provides a set of first principles that guide a vision, strategy, tactical goals, and implementation plans for the federal government, acting as both leader and partner, to work with all sectors of US society to provide for reliable and effective digital data preservation and access.[935] The strategic plan developed by IWGDD is a strategically important step in addressing the digital data preservation and access needs of the US science and engineering research and education sectors.[936] The agency took into account the contributions of representatives from 22 federal agencies in preparing the report.

The vision of the IWGDD is of "a digital scientific data universe in which data creation, collection, documentation, analysis, preservation, and dissemination can be appropriately, reliably, and readily managed. This will enhance the return on our nation's research and development investment by ensuring that digital data realize their full potential as catalysts for progress in our global information society".[937]

The IWGDD's strategy for realising this vision is described as:

Create a comprehensive framework of transparent, evolvable, extensible policies and management and organizational structures that provide reliable, effective access to the full spectrum of public digital scientific data. Such a framework will serve as a driving force for American leadership in science and in a competitive,

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[933] Committee on Geophysical and Environmental Data, Board on Earth Sciences and Resources, Division on Earth and Life Studies, National Research Council, *Resolving conflicts arising from the privatisation of environmental data,* Washington, DC, National Academy Press, 2001.

[934] *Harnessing the Power of Digital Data for Science and Society*, Report of the Interagency Working Group on Digital Data to the Committee on Science of the National Science and Technology Council (January 2009) http://www.nitrd.gov/about/Harnessing_Power_Web.pdf accessed on 5 June 2009.

[935] See the commendation, dated January 14, 2009, by the Director, Office of Science and Technology Policy, Executive Office of the President, which accompanies the Report.

[936] For the purposes of the report, digital data are defined as "any information that can be stored digitally and accessed electronically, with a focus specifically on data used by the federal government to address national needs or derived from research and development funded by the federal government". See http://www.nitrd.gov/about/Harnessing_Power_Web.pdf at page 3, footnote 2.

[937] *Harnessing the Power of Digital Data for Science and Society*, Report of the Interagency Working Group on Digital Data to the Committee on Science of the National Science and Technology Council (January 2009) Executive Summary, p 1. Available at http://www.nitrd.gov/about/Harnessing_Power_Web.pdf accessed on 5 June 2009.

global information society.[938]

A set of guiding principles was developed by the Working Group following its analysis of the current digital scientific data landscape. The principles are based on the expertise of the members of the Working Group, supplemented by contributions from outside experts and documentation from several major studies of the challenges and opportunities presented by a fully digital world. These guiding principles are:

- science is global and thrives in the digital dimensions;
- digital scientific data are national and global assets;
- not all digital scientific data need to be preserved and not all preserved data need to be preserved indefinitely;
- communities of practice are an essential feature of the digital landscape;
- preservation of digital scientific data is both a government and private sector responsibility and benefits society as a whole;
- long-term preservation, access, and interoperability require management of the full data life cycle; and
- dynamic strategies are required.[939]

The report makes it clear that the strategic framework, recommendations, and goals presented are based strongly on these guiding principles.

To pursue the strategy of realising its vision of the digital data scientific universe, as set out above, the IWGDD recommends that:

- a National Science and Technology Council (NSTC) Subcommittee for digital scientific data preservation, access, and interoperability be created;
- appropriate departments and agencies lay the foundations for agency digital scientific data policy and make the policy publicly available; and
- agencies promote a data management planning process for projects that generate preservation data.[940]

The Working Group indicates that if these three recommendations are implemented together in a coordinated manner they can reform and redesign the digital scientific data landscape. In operational terms the IWGDD considers that, through the strength of the National Science and Technology Council (NSTC) environment, it will be able to pursue goals requiring broad cooperation and coordination whilst at the same time enabling federal agencies to pursue their missions and empower their respective communities of practice. The goals targeted by these recommendations are:

- to be both leader and partner;
- to maximize digital data access and utility;
- to implement rational, cost-efficient planning and management processes;
- to empower the current generation while preparing the next;
- to support global capability; and
- to enable communities of practice.[941]

The report identifies the following key elements as necessary to ensure that the recommendations of the IWGDD work together for maximum operational impact:

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[938] Ibid, p 2.
[939] Ibid, pp 10-12.
[940] Ibid, pp 14-15.
[941] Ibid, pp 16-19.

- Subcommittee responsibilities should include topics requiring broad coordination, such as extended national and international coordination; education and workforce development; interoperability; data systems implementation and deployment; and data assurance, quality, discovery, and dissemination.

- In laying appropriate policy foundations, agencies should consider all components of a comprehensive agency data policy, such as preservation and access guidelines; assignment of responsibilities; information about specialized data policies; provisions for cooperation, coordination and partnerships; and means for updates and revisions.

- The components of data management plans should identify the types of data and their expected impact; specify relevant standards; and outline provisions for protection, access, and continuing preservation.[942]

On the particular issue of how data management plans, identified in the third of the key elements above, might appropriately address the issue of access the report states:

> *Access*. Description of plans for providing access to data. This should include a description and rationale for any restrictions on who may access the data under what conditions and a timeline for providing access. This should also include a description of the resources and capabilities (equipment, connections, systems, expertise, etc.) needed to meet anticipated requests. These resources and capabilities should be appropriate for the projected usage, addressing any special requirements such as those associated with streaming video or audio, movement of massive data sets, etc.[943]

Implementation of the Report's recommendations would very greatly advance the right digital environment in which "[d]ata are not consumed by the ideas and innovations they spark but are an endless fuel for creativity. A few bits, well found, can drive a giant leap of creativity".[944]

"Government Data and the Invisible Hand", Ed Felten et al, Yale Journal of Law and Technology (2009)

Government Data and the Invisible Hand[945] by Ed Felten, David Robinson, Harlan Yu and Bill Zeller discusses how to use information technology to make government more transparent. The authors make specific suggestions about how to make this happen. The introduction to the paper states:

> If the next Presidential administration really wants to embrace the potential of Internet-enabled government transparency, it should follow a counter-intuitive but ultimately compelling strategy: *reduce* the federal role in presenting important government information to citizens. Today, government bodies consider their own websites to be a higher priority than technical infrastructures that open up their data for others to use. We argue that this understanding is a mistake. It would be preferable for government to understand providing reusable data, rather than providing websites, as the core of its online publishing responsibility.
>
> In the current Presidential cycle, all three candidates have indicated that they think the federal government could make better use of the Internet. Barack Obama's platform explicitly endorses "making government

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[942] Ibid, Executive Summary, p 2. Full details in the Report are at pp 21-24.
[943] Ibid, p 24.
[944] Ibid, Executive Summary, p 1.
[945] Ed Felten et al, 'Government Data and the Invisible Hand', (2009) 11 *Yale Journal of Law and Technology* 160. Available at http://www.yjolt.org/11/fall/robinson-160. This paper was referred to by the UK Power of Information Taskforce in its final report published in March 2009, see http://poit.cabinetoffice.gov.uk/poit/wp-content/uploads/2009/03/poit-report-final-doc.doc.

data available online in universally accessible formats." Hillary Clinton, meanwhile, remarked that she wants to see much more government information online. John McCain, although expressing excitement about the Internet, has allowed that he would like to delegate the issue, possible to a vice-president.

But the situation to which these candidates are responding – the wide gap between the exciting uses of Internet technology by private parties, on the one hand, and the government's lagging technical infrastructure on the other – is not new. The federal government has shown itself consistently unable to keep pace with the fast-evolving power of the Internet.

In order for public data to benefit from the same innovation and dynamism that characterize private parties' use of the Internet, the federal government must reimagine its role as an information provider. Rather than struggling, as it currently does, to design sites that meet each end-user need, it should **focus on creating a simple, reliable and publicly accessible infrastructure that "exposes" the underlying data.** Private actors, either nonprofit or commercial, are better suited to deliver government information to citizens and can constantly create and reshape the tools individuals use to find and leverage public data. The best way to ensure that the government allows private parties to compete on equal terms in the provision of government data is to **require that federal websites themselves use the same open systems for accessing the underlying data as they make available to the public at large.**

Our approach follows the engineering principle of separating data from interaction, which is commonly used in constructing websites. Government must provide data, but we argue that websites that provide interactive access for the public can best be built by private parties. This approach is especially important given recent advances in interaction, which go far beyond merely offering data for viewing, to offer services such as advanced search, automated content analysis, cross-indexing with other data sources, and data visualization tools. These tools are promising but it is far from obvious how best to combine them to maximize the public value of government data. Given this uncertainty, the best policy is not to hope government will choose the one best way, but to rely on private parties with their vibrant marketplace of engineering ideas to discover what works.[946]

The authors argue that when providing data on the Internet, the federal government's core objective should be to build open infrastructures that enable citizens to make their own uses of the data. If, upon achieving that objective, government takes the additional step of developing finished sites that rely on the data, that too would be genuine progress according to the authors. Their proposal would reverse the current government policy of regarding government websites themselves as the primary vehicle for the distribution of public data, and open infrastructures for sharing the data as a worthy but nevertheless secondary objective.[947]

After reviewing various government website initiatives and private sector innovation, and arguments counter to their views the authors include in their conclusion the following observations including the likely sporadic nature only of any possible revitalisation in government websites following the election then in prospect:

The federal government's current web presence falls far short of what is possible. The energy and opportunity for change that comes with a new President could easily lead to an episodic upgrading of government web sites, a sudden shift after which sites will continue to drift out of date. If the administration instead steps forward and adopts the grassroots model we suggest, then the federal government's Internet presence will be permanently improved—citizen access to government data will keep pace with technology's progress indefinitely into the future.[948]

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[946] Ibid, pp 160-161.
[947] Ibid, p 173.
[948] Ibid, p 175.

"Overview of US Federal Government Information Policy", Nancy E Weiss and Paul Uhlir (2008)

In the presentation, *Overview of US Federal Government Information Policy*,[949] Nancy E Weiss of the United States Institute of Museum and Library Services and Paul Uhlir of the United States National Academies summarise the main arguments for placing government-generated information in the public domain and describe countervailing policies and practices that may limit access to and reuse of government information:

> **Compelling reasons for placing government-generated information in the public domain or under open access conditions:**
>
> • A government entity needs no legal incentives from exclusive property rights to create information. Both the activities that the government undertakes and the information produced by it in the course of those activities are a public good.
>
> • The public has already paid for the production of the information. Free and open access is the most appropriate way to disseminate online.
>
> • Transparency of governance is undermined by restricting citizens from access to and use of public data and information. Rights of freedom of expression are compromised by restrictions on re-dissemination of public information.
>
> • Numerous economic and non-economic positive externalities—especially through network effects—can be realized on an exponential basis through the open dissemination of public-domain data and information on the internet.
>
> **Countervailing polices and practices that may limit the free and unrestricted access to and use of government information:**
>
> • Statutory exemptions to public-domain access and use based on specific national security concerns, the need to protect personal privacy, and to respect confidential information (plus other exemptions to Freedom of Information Acts).
>
> • Government agencies generally protect the proprietary rights in information originating from the private sector that are made available for government use, unless expressly exempted.
>
> • Government agencies may not be allowed to compete directly with the private sector in providing information products and services, outside their legislative mandate.
>
> • Government-generated information is not necessarily provided free, even if there are no restrictions on reuse. Any charges, however, may pose an insurmountable barrier to access by the most disadvantaged potential users.[950]

"Overview of US Federal Government Information Policy", Nancy Weiss (2009)

In the *Overview of US Federal Government Information Policy*,[951] Nancy Weiss of the United

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[949] Presented at OECD Working Party on Information Economy workshop on public sector information, Paris, 4 – 5 February 2008, available at http://www.oecd.org/dataoecd/28/0/40047022.pdf, accessed on 3 April 2009.
[950] Ibid, pp 12-13.
[951] US National Committee for CODATA, Board on Research Data and Information, in collaboration with the Working

States Institute of Museum and Library Services takes a high level view of the long history of US information policy from the time of the Founding Fathers to the present day. The Founding Fathers addressed information policy and access issues in drafting the US Constitution. Central to their vision of the new US democracy was that citizens should be enabled to actively participate in their own governance through the provision of ready access to information and educational skills.

Weiss summarises the US policy position in the following terms:

> …US policy embodies a default rule of open availability and reuse of public sector information to maximise the government's public investment in producing that information. Government information is generally in the public domain, thereby recognizing the public's right to access and reuse government information. US policy promotes disseminating government information at no more than marginal costs, and balancing the many different interests in adopting any new laws without limiting the public's access to public sector information.[952]

"The Role of Government in a Digital Age", Joseph Stiglitz, Peter Orszag and Jonathan Orszag (2000)

One of the most influential economic studies on government information in the digital online environment is the 2000 report by Joseph Stiglitz, Peter Orszag and Jonathan Orszag, *The Role of Government in a Digital Age*.[953] In this study, commissioned by the United States Computer and Communications Industry Association (CCIA), Stiglitz et al examined the appropriate role of governments in the online and information environment. The report was intended to provide a blueprint for policymakers in determining the proper role for government's on-line offerings. (In January 2009, Peter Orszag was appointed by President Obama as Director of the Office of Management and Budget, which is responsible for implementing the US federal government's information access policy.)

The study sets out principles to guide government involvement, based on a recognition that while governments have a role to play, it should not extend too far into downstream value-adding activities. Stiglitz et al proposed the following principles to guide governmental activity in the online environment:

• "Green Light"

Principle 1: Providing public data and information is a proper governmental role

Principle 2: Improving the efficiency with which governmental services are provided is a proper governmental role

Principle 3: The support of basic research is a proper governmental role

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• "Yellow Light"

> Principle 4: The government should exercise caution in adding specialised value to public data and information

> Principle 5: The government should only provide private goods, even if private-sector firms are not providing them, under limited circumstances

> Principle 6: The government should only provide a service online if private provision with regulation or appropriate taxation would not be more efficient

> Principle 7: The government should ensure that mechanisms exist to protect privacy, security, and consumer protection online

> Principle 8: The government should promote network externalities only with great deliberation and care

> Principle 9: The government should be allowed to maintain proprietary information or exercise rights under patents and/or copyrights only under special conditions (including national security)

• "Red Light"

> Principle 10: The government should exercise substantial caution in entering markets in which private-sector firms are active

> Principle 11: The government (including government corporations) should generally not aim to maximise net revenues or take actions that would reduce competition

> Principle 12: The government should only be allowed to provide goods or services for which appropriate privacy and conflict-of-interest protections have been erected.[954]

These principles are relevant to policies applicable to the generation of, value adding to, provision of access to, and the distribution and pricing of public sector data, including geospatial data.

This document begins by examining the impact of information technology on the economy, business and government, and is followed by an explanation of the theory of governments' role and current government policy (as at 2000). Part 2 of the text explores the principles for government provision of goods and services in a digital economy and it breaks these principles into three distinct segments and includes:

- "Green Light" activities, which the government should undertake with little concern;
- "Yellow Light" activities, which the government should undertake with caution; and

- "Red Light" activities, which the government should generally not undertake.[955]

The report concludes by applying the principles in five case studies, including the Department of Labor's on-line job market information system, the United States Postal Service eBillPay program, private-sector dissemination of legal information, on-line tax preparation software, and a fee-based search engine from the National Technical Information Service.

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[954] Ibid, Executive Summary, p 5.
[955] Ibid, p 50.

Chapter 6: Canada

Canada, like the United States and Australia, has a federal system of government. Unlike the United States and Australia, however, Canada has historically supported a higher level of private sector participation in the development, funding and maintenance of key spatial data infrastructure (SDI).[956] This is reflected in initiatives led by GeoConnections Canada,[957] a national program headed by Natural Resources Canada which involves the federal, provincial (State), territory and municipal governments, and the private and academic sectors working in partnership with governments to develop the components of the SDI.[958] GeoConnections Canada was established in 1999 to develop the Canadian Geospatial Data Infrastructure (CGDI),[959] with the objective of harmonising Canada's geospatial databases and increasing the amount of geospatial data, information and services available on the internet. It coordinates members of the Canadian geomatics constituency, bringing them together to agree on policy positions and promoting the use of data standards and protocols to facilitate access to Canadian geospatial data.

In its initial phase - 1999 to 2004 - GeoConnections was fully funded by the Canadian Government, but in the current (second) phase, which runs from 2005 to 2010, its projects are jointly funded by public sector agencies and the Canadian geomatics community. The program works with partners in geomatics technology development and in four priority areas: public health, public safety and security, the environment and sustainable development, and matters of importance to Aboriginal peoples. GeoConnections co-funds projects that encourage decision-makers in these priority areas to work with the Canadian geomatics sector in developing or enhancing technologies that meet their specific needs. Its collaborators include private companies, government agencies (federal, provincial or municipal), non-government organizations, academic institutions or a combination of some or all of these. By playing a coordinating role, "GeoConnections assists Canada's geomatics stakeholders in working together and thereby achieving more in less time at less cost … [it is] helping to pave the way for Canada's geomatics innovations and successes well into the coming decades".[960]

Canada, like Australia – but unlike the United States – continues to recognise the existence of copyright ("Crown copyright") in materials produced by the government.[961] While there have been initiatives designed to promote access to public sector materials in Canada in recent years (notably programs such as GeoBase and GeoGratis which provide free access to government spatial data), the Canadian situation is similar to that in Australia in that there is as yet no clearly established information policy or strategy operating at a national level.

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[956] Garfield Giff and David Coleman, *Spatial Data Infrastructure Funding Models: A necessity for the success of SDIs in Emerging Countries,* FIG XXII International Congress, Washington DC, 26 April 2002; see also Garfield Giff, *Financing Spatial Data Infrastructure Development: Towards Alternative Funding Models*, Proceedings of International Symposium on SDI, Melbourne Australia, November 2001.

[957] GeoConnections Canada is a national federal, provincial, local government initiative which commenced in 1999 and is focused on the establishment of the Canadian Geospatial Data Infrastructure (CGDI).

[958] Irwin Itzkovitch, *A National Partnership to Develop the Canadian Geospatial Data Infrastructure (CGDI)*, 8th United Nations Regional Cartographic Conference for the Americas, New York, 27 June -1 July 2005.

[959] The CGDI was to be developed by 2004.

[960] GeoConnections Canada, *Geomatics puts your world in a new perspective,* 2008, p 9, at http://www.geoconnections.org/publications/Key_documents/overview_english.pdf, accessed on 22 December 2008.

[961] *Copyright Act 1985*, s 12.

Copyright Act 1985

Section 12 of the *Copyright Act* (RSC, 1985, C-42) provides for Crown copyright, such that the Crown owns copyright on any work "prepared or published by or under the direction or control of Her Majesty or any government department…" This provision, conferring copyright on Canadian government entities, is in virtually identical terms to the Crown copyright provisions in the Australian *Copyright Act 1968.*[962]

In April 2005, the Australian Copyright Law Review Committee's Report, *Crown Copyright,*[963] considered the history of Crown Copyright legislative provisions in various common law jurisdictions around the world, including Canada:[964]

> [3.47] …. review of the Crown copyright provisions is envisaged within the next few years as part of a broad review of copyright law. The current legislation is very similar to the former UK provisions, whereby 'Her Majesty' owns copyright in any work prepared or published by or under the direction or control of Her Majesty or any government department (subject to contrary agreement with the author), for a term of 50 years from first publication.
>
> [3.48] A previous Canadian review in 1995 by the Information Highway Advisory Council recommended that while Crown copyright should be retained, a 'more liberal approach' should be taken to making Crown works available. In particular, the review recommended that:
>
> - the Crown in right of Canada should, as a rule, place federal government information and data in the public domain; and
> - Crown copyright is asserted to generate revenue, licensing should be based on the principles of non-exclusivity and the recovery of no more than the marginal costs of reproducing the information or data.

The Canadian Crown Copyright provisions remain in force today and have not been subject to broad review.

"Canadian Geospatial Data Infrastructure Target Vision, Version 1", CGDI Architecture Working Group (2001) and "Canadian Geospatial Data Infrastructure (CGDI) Roadmap: Achieving the Vision of the CGDI", GeoConnections (2005)

The vision of the CGDI as described by the CGDI Architecture Working Group in March 2001 in the *Canadian Geospatial Data Infrastructure Target Vision, Version 1* is as follows:

> A Canadian geospatial information infrastructure that is accessible to all communities, pervasive throughout our country, ubiquitous for its users, and self-sustaining, to support the protection and betterment of Canada's

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[962] See *Copyright Act 1968 (Cth),* ss 176-178.
[963] See http://www.clrc.gov.au/www/agd/agd.nsf/Page/RWPBB79ED8E4858F514CA25735100827559.
[964] Ibid. Paras 3.47 and 3.48 at pp 28-29.

health, social, cultural, economic and natural resource heritage and future.[965]

The external and internal environments of the CGDI, which impact upon the CGDI Roadmap, are grouped into seven thematic areas: technological, governance, legislative, legal, human resources, financial and government priorities.[966]

The CGDI's original seven guiding principles – subsequently called "Founding Principles" in the 2005 report – as stated in the *Canadian Geospatial Data Infrastructure Target Vision, Version 1* in 2001, have been extended to ten in consultation with stakeholders by adding "Building Principles". The Founding Principles and Building Principles are:

Founding Principles:

- **Open:** The CGDI will be based on open and interoperable standards and specifications for operational transactions and information exchange. "Open and shared" in this context means that the specifications are available for the world to take, use, and modify for other purposes. These specifications will be based on national and international standards where available.

- **Transparent:** The CGDI will allow users to access data and services seamlessly in a manner that removes the complexities of the underlying technology and information infrastructure. "Seamless" implies the elimination or hiding of artificial boundaries introduced by jurisdictions or by technical issues such as scale or quality of information.

- **Cooperative:** The CGDI will help organisations from the private sector, government and academia collaborate. The CGDI will define common technologies and standards rather than prescribe single or proprietary implementation solutions.

- **Evolving:** The network of participating organisations will continue to encompass new requirements and business applications for information and service delivery to their respective users. The CGDI will evolve to meet these changing requirements and developments.

- **Timely:** The CGDI will define and recommend technologies and services that will support timely or real-time access to information.

- **Self-sustaining**: The CGDI will be sustained through the contributions of the participating organisations and the broad user-community and through being relevant to these groups.

- **Self-organising**: The CGDI will enable various levels of participating organisations to contribute geospatial information, meta-data, services and applications without the requirement for centralised administration, access, and data warehousing.[967]

Building Principles:

- **User-driven:** The CGDI will emphasize the nurturing of and service to a broad user community. This approach will include user-driven developments, services, and enhancements that facilitate policy and decision making.

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[965] CGDI Architecture Working Group, *Canadian Geospatial Data Infrastructure Target Vision, Version 1,* 2001, p 4, at http://www.geoconnections.org/publications/reports/tvip/CGDI_Vision_E.pdf, accessed on 22 December 2008.

[966] See GeoConnections. *Canadian Geospatial Data Infrastructure (CGDI) Roadmap: Achieving the Vision of the CGDI,* 2005, pp 8-11, at http://www.geoconnections.org/publications/tvip/Roadmap_E/CGDI_Roadmap_final_E.pdf, accessed on 22 December 2008.

[967] Ibid, p 26. See also CGDI Architecture Working Group, *Canadian Geospatial Data Infrastructure Target Vision, Version 1*, 2001, p 4, at http://www.geoconnections.org/publications/reports/tvip/CGDI_Vision_E.pdf, accessed on 22 December 2008 (where they are called "Guiding Principles").

- **Closest to Source:** The CGDI will build upon its principle of self organisation to encourage organisations that are closest to source to provide data. This emphasis will increase quality and efficiency by eliminating duplication and overlap. The CGDI will need to be developed further through partnerships with municipal, provincial and territorial governments; other federal departments and agencies; as well as international sources.

- **Secure:** The CGDI recognizes the importance of openness but realises that a need exists to secure sensitive or proprietary data. This need for security is augmented by the requirement for high stability and data reliability.[968]

GeoConnections Canada

GeoConnections Canada[969] is a national federal/provincial/territorial initiative launched in 1999,[970] with the objective of developing the Canadian Geospatial Data Infrastructure (CGDI) and making Canada's geographic information available on the internet.[971] It was initially funded with $60 million over a five year period up to 2004. After successfully commissioning the CGDI, GeoConnections received further funding (for the period 2005 to 2010) to continue developing and expanding the CGDI in response to community feedback. GeoConnections seeks to develop capacity in rural, remote and Aboriginal communities/municipalities to improve their ability to plan and made decisions towards a sustainable future through the use of modern geomatics techniques.[972]

The underlying premise of the CGDI is that private industry is best suited to develop the components of the CGDI in a model partnership with government. Consequently, GeoConnections has been developed on a collaborative model involving the participation of federal, provincial and territorial agencies, and the private and academic sectors. The GeoConnections project has been implemented through various committees or nodes (including the GeoConnections Policy Node)[973] and its activities are guided by consultations with the Canadian Council on Geomatics (CCOG)[974] and the Geomatics Industry Association of Canada (GIAC). In collaboration with the US Federal Geographic Data Committee (FGDC), GeoConnections is developing a Canada-US spatial data infrastructure.[975]

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[968] GeoConnections, *Canadian Geospatial Data Infrastructure (CGDI) Roadmap: Achieving the Vision of the CGDI*, 2005, p 27, at http://www.geoconnections.org/publications/tvip/Roadmap_E/CGDI_Roadmap_final_E.pdf, accessed on 22 December 2008.

[969] See http://www.geoconnections.org/en/index.html and GeoConnections Discovery Portal at http://geodiscover.cgdi.ca/.

[970] See Geoconnections Secretariat, *A National Program to develop the Canadian Geospatial Data Infrastructure (CGDI) Program Briefing*, Geoconnections, Nov 1999, see http://www.geoconnections.net/english/search/index.html.

[971] See http://cgdi.gc.ca/en/index.html and http://www.geoconnections.org/en/aboutcgdi.html.

[972] Irwin Itzkovitch, *GeoConnections*, paper presented at 8th United Nations Regional Cartographic Conference for the Americas, New York, 27 June -1 July, 2005.

[973] The GeoConnections Policy Node is responsible for: "developing and promoting policies that facilitate access to, and use of, geospatial data from any level of government and other sectors; identifying and resolving licensing and data distribution issues and other issues that might hinder the effective distribution and use of digital geospatial data; promoting and facilitating data sharing; expanding partnerships; and simplifying access to, and lowering the cost of, geospatial data.": see Garry Sears, KPMG Consulting Inc. for GeoConnections Policy Advisory Node, *Canadian Geospatial Data Policy Study,* March 2001, p1, at http://www.geoconnections.org/programsCommittees/proCom_policy/keyDocs/KPMG/KPMG_E.pdf, accessed on 22 December 2008.

[974] The Canadian Council on Geomatics (CCOG) is a federal-provincial consultative committee.

[975] GeoConnections, *2008 NSDI CAP Category 4: Joint Canadian and United States Spatial Data Infrastructure*

The GeoConnections website explains the GeoConnections program and the program's key features as follows:

> GeoConnections helps decision-makers use online location-based (or "geospatial") information, such as maps and satellite images, to tackle some of Canada's most pressing challenges. The program focuses on working with partners in public health, public safety and security, the environment and sustainable development, Aboriginal matters, and geomatics technology development.
>
> **Improving Canadians' quality of life by enhancing decision making**
> By helping make location-based data and technologies accessible and useful to decision-makers in public health, public safety and security, the environment and sustainable development, and Aboriginal matters, GeoConnections is contributing in numerous ways to a better quality of life for Canadians.
> ….
> **Co-funding offered to develop tailored solutions**
> Now in its second phase, which will run from 2005 to 2010, GeoConnections is working to ensure that decision-makers in key areas benefit from the Canadian Geospatial Data Infrastructure (CGDI), a one-stop searchable portal for a wealth of location-based information. We are accomplishing this objective by co-funding projects that encourage key decision-making audiences (public health, public safety and security, the environment and sustainable development, and Aboriginal matters) to work with the Canadian geomatics sector in developing technologies that meet their specific needs.
>
> **Partners play a vital role**
> GeoConnections is a national partnership program led by Natural Resources Canada. Although GeoConnections acts as a catalyst in creating solutions for decision-makers in the four priority areas, the program also relies heavily on its partners. These partners can be private companies, government agencies at all levels, non-government organizations, academic institutions, or sometimes a combination of the above. We devote ample time and energy to establishing and nurturing partnerships because they anchor the success of the Canadian Geospatial Data Infrastructure as an online resource to support decision making.
>
> **Streamlining data policies simplifies data access and usage**
> GeoConnections also brings Canada's geomatics community together to agree on policies that simplify data licensing, access, and sharing. For example, we worked with data providers in governments across the country to streamline the data licensing process by encouraging the community to adopt a standard form for issuing data licenses. By fulfilling this role of coordinator, GeoConnections assists Canada's geomatics community to pull in the same direction and thereby do more in less time at less cost.
>
> **National standards characterize the CGDI and expand its value**
> GeoConnections also strongly advocates the use of national standards. By encouraging technology developers, solutions developers, and data suppliers to adhere to national standards endorsed for the Canadian Geospatial Data Infrastructure (CGDI), GeoConnections greatly enhances the CGDI's value to Canadians. That's because standardized data or applications accessible via the CGDI from one provider can then easily be layered or used with those from another. This interoperability will often produce richer and more useful information than a single data set can provide.
>
> The standards that GeoConnections advocates for the CGDI mirror many international geomatics standards. This characteristic means that Canadian applications developers and data suppliers can easily export their technologies, data, and expertise to other countries adhering to the same international standards.
>
> GeoConnections negotiates and develops data standards and policies with government agencies at the federal and provincial/ territorial levels domestically and with governments and standards bodies internationally.[976]

In the course of its work, GeoConnections Canada has published reports dealing with various

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Project, Ottawa, Ontario, 2007, at http://www.geoconnections.org/en/opportunities/getDoc=800.
[976] See http://www.geoconnections.org/en/aboutGeo.html, accessed 17 December 2008.

aspects of its program and geospatial data.[977]

"The Dissemination of Government Geographic Data in Canada: Guide to Best Practices" (Version 2), GeoConnections Canada (2008)

Version 2 of *The Dissemination of Government Geographic Data in Canada: Guide to Best Practices* (the "*Guide to Best Practices*")[978] was developed by the Data Licensing Guide Working Group (DLGWG) established by the GeoConnections Secretariat.[979] It is based on consultations with government departments and agencies involved in producing, using, and licensing government geographic data, as well as input from the Canadian geomatics industry.

The *Guide to Best Practices* explains the legal basis of data licensing as follows:

> Government geographic data licence agreements are the written expression of a contractual relationship entered into by government in support of overarching government mandates and policy objectives. The terms governing government geographic data licence agreements find their justification in the data dissemination objectives established by government in support of the same overarching mandates and policy objectives.
>
> The subject-matter of government geographic data licence agreements is intellectual property. A basic understanding of intellectual property, and perhaps more precisely of copyright law, is useful to appreciate the legal intricacies of government geographic data licence agreements.
>
> ……..
>
> Of the various types of intellectual property protection afforded in Canada, copyright is of the most relevance to government geographic data.[980]

Version 2 of the *Guide to Best Practices* sets out a revised integrated framework for the four types of government geographic data licensing models most commonly used in Canada:

- the unrestricted use model;

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[977] See for example, *The Canadian Geospatial Data Infrastructure - Architecture Description (Version 2.0)*, 2005, available at http://www.geoconnections.org/publications/tvip/arch_E/CGDI_Architecture_final_E.html; *Better knowledge means better decisions: Canadian Geospatial Data Infrastructure,* October 2004 at http://www.geoconnections.org/publications/Key_documents/CGDI_Brochure/sc_CGDI_bro_e.pdf; *CGDI Target Vision and Implementation Plan (Version 2.0)*, September 2005: components include: *Vision: Better knowledge for better decisions*, at http://www.geoconnections.org/publications/tvip/Vision_E/CGDI_Vision_final_E_.pdf; *Roadmap: Achieving the Vision of the CGDI*, at http://www.geoconnections.org/publications/tvip/Roadmap_E/CGDI_Roadmap_final_E.pdf; *Architecture: Architecture Description (Version 2.0)*, at http://www.geoconnections.org/publications/tvip/arch_E/CGDI_Architecture_final_E.pdf; *A Developers' Guide to the CGDI: Developing and publishing geographic information, data and associated services,* February 2004, at http://www.geoconnections.org/publications/Technical_Manual/html_e/cgdiindex.html; and *CGDI Online Training*, August 2004, at http://www.geoconnections.org/publications/training_manual/e/index.htm.

[978] GeoConnections Canada, *The Dissemination of Government Geographic Data in Canada: Guide to Best Practices,* Version 2, 2008, available at http://www.geoconnections.org/publications/Best_practices_guide/Guide_to_Best_Practices_Summer_2008_Final_EN.pdf, accessed on 22 December 2008.

[979] Ibid, Executive Summary.

[980] Ibid, p 54.

- the end-user model;
- the reseller model; and
- the value-added reseller model.[981]

The Guide provides a rationale for appropriate uses, explains how each model builds on common structures, demonstrates their inter-relationships and provides clear guidance to assist licensing practitioners in selecting the most appropriate model and licence agreement. Recommended approaches to fundamental concepts such as ownership of intellectual property, liability, duration and termination are discussed in detail for the benefit of licensing practitioners, and are guided by data dissemination policy directives currently in force across federal departments and agencies.

Version 2 of the *Guide to Best Practices* supersedes the 2005 version in its treatment of issues that are now at the forefront of matters of central concern to government data licensing practitioners. In particular, version 2:

- addresses the new Canadian federal government data dissemination policy, as well as other overarching governmental policy positions that impact on the dissemination of government geographic data; and

- discusses how the evolving and transformative nature of geographic data, compounded with users' technological sophistication and expectations for technology-based data distribution, have spurred significant industry activity in a number of areas, including in relation to:
  - o metadata and the development by industry of applications assisting in the development of metadata for geographic data;
  - o web services; and
  - o geographic digital rights management.[982]

The 2008 update recognises the rapid developments and technological advances in web-based services, distributed computing, and other user applications since the earlier version of the guide was published. It acknowledges that new data distribution models and policies have emerged or become more prevalent and responds by including an unrestricted-use model template.

In the context of this unrestricted-use model involving web-based distribution and where the objective of dissemination is to promote the widest use possible of the licensed government geographic data, with no restrictions on further distribution, version 2 provides two licence templates. The first, which does not require the payment of a fee, is the GeoConnections No-Fee Unrestricted Use Web Wrap Licence Agreement[983]; the second, which requires payment of a fee, is the Fee-Based Unrestricted Use Licence Agreement.[984]

With respect to web-based distribution on a fee-paying basis, the *Guide to Best Practices* acknowledges that, in law, click-wrap agreements may be used. However, for policy, contract and risk management reasons, the Guide recommends a cautious approach be adopted and that, in the

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[981] Ibid, Executive Summary, pp 4-5.
[982] Ibid, Executive Summary, pp 4-5.
[983] Ibid, Executive Summary, p 3. The full text of the licence is in Appendix A to version 2 of the *Guide to Best Practices*. See below for commentary on these licences.
[984] The full text of the licence is in Appendix B to version 2 of the *Guide to Best Practices*.

context of an integrated approach to the licensing of government geographic data, producers of government geographic data wishing to distribute their data on a fee basis refrain from entering into click-wrap agreements. Rather, the *Guide to Best Practices* strongly recommends that fee-based licence agreements be entered into using traditional methods by signing a hard copy agreement, although the actual delivery of the licensed government geographic data may occur electronically. Nevertheless, delivery is only to take place after the applicable fee-based licence agreement has been signed.[985]

The Unrestricted Use Model contains few restrictions on how the licensed government geographic data may be used and allows for further distribution, thereby supporting the development by private sector firms of location-based services and products based on licensed government geographic data. Downstream distribution of the licensed government geographic data may occur through various means, including by system integrators, original equipment manufacturer and resellers for distribution to end-users.[986] The unrestricted use licences contain only those requirements considered to be consistent with the objectives of the unrestricted use model:

- widest use and distribution of the licensed government geographic data;
- indemnification and control of liability;
- promotion of intellectual property development by the licensee; and
- acknowledgement of source and incorporation of government-furnished metadata in downstream distribution or applications containing any of the licensed government geographic data.[987]

GeoBase

GeoBase[988] is a federal, provincial, territorial and municipal government initiative overseen by the Canadian Council on Geomatics (CCOG).[989] Its objective is to ensure the provision of, and access to, a common, up-to-date and maintained base layer of geospatial data for the whole of Canada. Through the GeoBase portal, users can access and, upon registering user details, can download quality geospatial information at no cost.[990] The downloading of GeoBase data is under the terms of the GeoBase Unrestricted Use Licence Agreement.

In 2001, the CCOG approved GeoBase's vision, principles and data definitions. GeoBase is a key component of the Canadian Geospatial Data Infrastructure (CGDI). The GeoBase portal accords with GeoConnections' vision and principles.

The underlying principles of cooperation between the various GeoBase partners are to provide access, at no cost and with no restrictions for users, to:

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[985] See GeoConnections Canada, *The Dissemination of Government Geographic Data in Canada: Guide to Best Practices,* Version 2, 2008, Executive Summary, p 3, available at http://www.geoconnections.org/publications/Best_practices_guide/Guide_to_Best_Practices_Summer_2008_Final_EN.pdf, accessed on 22 December 2008.

[986] Ibid, p 33.

[987] Ibid.

[988] See http://www.geobase.ca/geobase/en/index.html accessed on 22 December 2008.

[989] See http://www.ccg-cocg.ca accessed 5 June 2009. The Canadian Council on Geomatics is a federal-provincial-territorial consultative body for geographic information management.

[990] http://www.geobase.ca/geobase/en/licence.jsp.

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- quality geospatial data (current, accurate, consistent and maintained); and
- unique geospatial data (one data, collected once and maintained closest to the source).[991]

GeoBase's goal is to provide the geospatial reference and context for a broad variety of thematic data for government, business, and personal applications.

The partners consider that the availability of high-quality base geospatial information will promote the development of value-added products and services provided by the private sector. Another intended benefit is for Canada's geomatics industry to maintain its competitiveness on domestic and international markets.[992]

GeoGratis

GeoGratis[993] is a portal established by the Earth Sciences Sector (ESS) of Natural Resources Canada (NRCan), which provides geospatial data owned by the Canadian government at no cost via the internet. The GeoGratis website encourages users to voluntarily register, as this allows Natural Resources Canada to "better know its users and to increase the quality of products and services offered on GeoGratis".[994] This may be contrasted with the mandatory user registration requirement under the GeoBase portal.

The geospatial material on the GeoGratis website is available at no cost under the GeoGratis Licence Agreement for Unrestricted Use of Digital Data.[995] This licence is almost identical to the GeoBase Unrestricted Use Licence Agreement, with the only substantive difference appearing to be that under the GeoGratis licence, Canada (the Crown, through the Federal Minister of Natural Resources Canada) is the owner of the data whereas under the GeoBase licence, Canada (the Crown, through the Federal Minister of Natural Resources Canada) may either be the owner or have been granted the necessary legal rights in the data to authorise Canada to enter into the licence. The GeoGratis Unrestricted Use Licence grants to the licensee the same generous re-use rights as those under the GeoBase licence. Similarly, the licence period is limited to one year's duration (with automatic renewal provided licensee is not in breach) and the licensee is required to indemnify the licensor against any loss or damage.

The free thematic data available through the GeoGratis portal is grouped in collections (e.g. raster and vector data) that are compatible with popular geographic information systems (GIS), with image analysis systems and the graphics applications of editing software.

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[991]   See   the   Geobase   webpage   -   About   GeoBase   Initiative, http://www.geobase.ca/geobase/en/about/index.html;jsessionid=582CC8F5BD90BA422D4B9CB54DB6F17D,   last updated 4 June 2009, accessed 5 June 2009.
[992] Ibid.
[993] See http://www.geogratis.ca/geogratis/en/index.html, accessed on 22 December 2008.
[994]   See   http://www.geogratis.ca/geogratis/en/user/register.jsp;jsessionid=733FF6896C7AB47D31297A3852722BA9, accessed on 22 December 2008.
[995] Ibid.

APPENDIX 1

Policy Documents

This Appendix contains extracts from the texts of key documents that provide statements of policies and principles on access to and re-use of public sector information (PSI) (including spatial information), scientific data from public research, and cultural works that have been identified in the review as being of particular significance.

Some policy documents have been selected for inclusion in this collection because they directly address the issue of access to and reuse of PSI: *OECD Recommendation of the Council for Enhanced Access and More Effective Use of Public Sector Information (2008)* **(Document 3)**; *US Office of Management and Budget's Circular A-130 on Management of Federal Information Resources (2000)* **(Document 5)**; *EU PSI Directive (2003)* **(Document 6)**; *EU INSPIRE Directive (2007)* **(Document 8)**. Access and pricing issues relevant to spatial data were also addressed in the Australian Government's *Policy on Spatial Data Access and Pricing Principles (2001)* **(Document 4)**.

Other documents have been identified for inclusion on the basis that, while they do not relate specifically to PSI, they are highly relevant to spatial information because they deal with environmental information and research data. Important statements on access to and reuse of environmental information are found in the *UN Rio Declaration on Environment and Development (1992)* **(Document 9)**, the *UN Aarhus Convention on Access to Environmental Information (1998)* **(Document 10)** and the *EU Environmental Information Directive (2003)* **(Document 7)**. Access to and reuse of the results of publicly funded research are the subject of the OECD Council's *Recommendation concerning Access to Research Data from Public Funding (2006)* **(Document 2)** which is annexed to the OECD's *Seoul Declaration on the Future of the Internet Economy (2008)* **(Document 1)**.

1. "Seoul Declaration on the Future of the Internet Economy", OECD Ministers (2008)[996]

WE, the Ministers and representatives of Australia, Austria, Belgium, Canada, Chile, the Czech Republic, Denmark, Egypt, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, India, Indonesia, Ireland, Israel, Italy, Japan, Korea, Latvia, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, Senegal, the Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, the United Kingdom, the United States of America and the European Community, assembled in Seoul, Korea, on 17 and 18 June 2008 to discuss the future of the Internet Economy.

......

WE SHARE a vision that the Internet Economy, which covers the full range of our economic, social and cultural activities supported by the Internet and related information and communications technologies (ICT), will strengthen our capacity to improve the quality of life for all our citizens by:

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[996] Organisation for Economic Co-operation and Development (OECD), *Seoul Declaration on the Future of the Internet Economy,* 18 June 2008, at p 7, available at http://www.oecd.org/dataoecd/49/28/40839436.pdf accessed on 5 June 2009.

….

- Developing an increasingly important platform for research, international science co-operation, creativity and innovation in many different sectors.

…..

to contribute to the development of the Internet Economy, we will:

….

(b) Foster creativity in the development, use and application of the Internet, through policies that:

- Maintain an open environment that supports the free flow of information, research, innovation, entrepreneur-ship and business transformation.

- Make public sector information and content, including scientific data, and works of cultural heritage more widely accessible in digital format.

- Encourage basic and applied research on the Internet and related ICTs.

- Encourage universities, governments, public research, users and business to work together in collaborative innovation networks and to make use of shared experimental Internet facilities.

- Combine efforts to combat digital piracy with innovative approaches which provide creators and rights holders with incentives to create and disseminate works in a manner that is beneficial to creators, users and our economies as a whole**.**

- Encourage new collaborative Internet-based models and social networks for the creation, distribution and use of digital content that fully recognise the rights of creators and the interests of users.

- Strengthen the development of human resources to take full advantage of the Internet and related ICTs, and further develop ICT skills and digital and media literacy.

2. "Recommendation of the Council concerning Access to Research Data from Public Funding", Organisation for Economic Co-operation and Development (OECD) (2006) [997]

THE COUNCIL,

……

Recognising the wide range of benefits that arise from improving international access to, and use of, publicly funded research data, as expressed in the Ministerial Declaration on Access to Research Data from Public Funding of 30 March 2004 [C(2004)31/REV1];

……

RECOMMENDS that Member countries take into consideration the Principles and Guidelines on Access to Research Data from Public Funding set out in the annex to this Recommendation and which form an integral part thereof and apply them, as appropriate for each Member country, to develop policies and good practices related to the accessibility, use and management of research data;

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[997] OECD, *Recommendation of the Council concerning Access to Research Data from Public Funding C(2006)*184, 14 December 2006, available at http://webdomino1.oecd.org/horizontal/oecdacts.nsf/Display/3A5FB1397B5ADFB7C12572980053C9D3?OpenDocument accessed on 5 June 2009. Note that these have also been published in the OECD publication: OECD (2007) OECD Principles and Guidelines for Access to Research Data from Public Funding, available at http://www.oecd.org/dataoecd/9/61/38500813.pdf.

INSTRUCTS the Committee for Scientific and Technological Policy to review the implementation of this Recommendation as necessary;

INSTRUCTS the Committee for Scientific and Technological Policy to review the Principles and Guidelines on Access to Research Data from Public Funding and when appropriate, to take into account advances in technology and research practices, with the intention of further fostering international co-operation.

ANNEX
PRINCIPLES AND GUIDELINES FOR ACCESS TO RESEARCH DATA FROM PUBLIC FUNDING

…….

III - Principles

A) Openness

Openness means access on equal terms for the international research community at the lowest possible cost, preferably at no more than the marginal cost of dissemination. Open access to research data from public funding should be easy, timely, user-friendly and preferably Internet-based.
......

B) Flexibility

Flexibility requires taking into account the rapid and often unpredictable changes in information technologies, the characteristics of each research field and the diversity of research systems, legal systems and cultures of each Member country. Specific national, social, economic and regulatory implications should be considered when organisations develop research data access arrangements, and when governments develop policies to promote data access and review the implementation of these Principles and Guidelines.
......

C) Transparency

Information on research data and data-producing organisations, documentation on the data and specifications of conditions attached to the use of these data should be internationally available in a transparent way, ideally through the Internet. Lack of visibility of existing research data resources and future data collection poses serious obstacles to access.
......

D) Legal conformity

Data access arrangements should respect the legal rights and legitimate interests of all stakeholders in the public research enterprise.
......

E) Protection of intellectual property

Data access arrangements should consider the applicability of copyright or of other intellectual property laws that may be relevant to publicly-funded research databases.
......

F) Formal responsibility

Access arrangements should promote explicit, formal institutional practices, such as the development of rules and regulations, regarding the responsibilities of the various parties involved in data-related activities. These practices should pertain to authorship, producer credits, ownership, dissemination, usage restrictions, financial arrangements, ethical rules, licensing terms, liability, and sustainable archiving.

Access arrangements, whether at the governmental or institutional levels, should be developed in consultation with representatives of all directly affected parties. In collaborative research programmes or projects, and

especially in international scientific co-operation or in research projects based on public / private partnerships where there are differences in regulatory frameworks, the parties involved should negotiate research data sharing arrangements as early as possible in the life of the research project, ideally at the initial proposal stage. This will help ensure that adequate and timely consideration will be given to issues such as the allocation of resources for sharing and sustainable preservation of research data, differences in national intellectual property laws, limitations due to national security, and the protection of privacy and confidentiality.

Access arrangements also should be responsive to factors such as the characteristics of the data, their potential value for research purposes, the level of data processing (raw versus partially processed versus final), whether they are homogeneous data from a facility instrument or sensor versus heterogeneous field data collected by single researchers, data on human subjects or physical parameters, and whether the data are generated directly by a government entity or as a result of government funding. These variations in the origin or type of data should be taken into consideration when establishing data access arrangements.
......

G) Professionalism

Institutional arrangements for the management of research data should be based on the relevant professional standards and values embodied in the codes of conduct of the scientific communities involved.
......

H) Interoperability

Technological and semantic interoperability is a key consideration in enabling and promoting international and interdisciplinary access to and use of research data. Access arrangements, should pay due attention to the relevant international data documentation standards. Member countries and research institutions should co-operate with international organisations charged with developing new standards.
......

I) Quality

The value and utility of research data depends, to a large extent, on the quality of the data itself. Data managers, and data collection organisations, should pay particular attention to ensuring compliance with explicit quality standards. Where such standards do not yet exist, institutions and research associations should engage with their research community on their development. Although all areas of research can benefit from improved data quality, some require much more stringent standards than others. For this reason alone, universal data quality standards are not practical. Standards should be developed in consultation with researchers to ensure that the level of quality and precision meets the needs of the various disciplines.
......

J) Security

Specific attention should be devoted to supporting the use of techniques and instruments to guarantee the integrity and security of research data. With regard to guaranteeing the integrity of a data set, every effort should be made to ensure the completeness of data and absence of errors. With regard to security, the data, along with relevant meta-data and descriptions, should be protected against intentional or unintentional loss, destruction, modification and unauthorised access in conformity with explicit security protocols. Data sets and the equipment on which they are stored should be protected as well from environmental hazards such as heat, dust, electrical surges, magnetism, and electrostatic discharges.
......

K) Efficiency

One of the central goals of promoting data access and sharing is to improve the overall efficiency of publicly-funded scientific research to avoid the expensive and unnecessary duplication of data collection efforts.
......

L) Accountability

The performance of data access arrangements should be subject to periodic evaluation by user groups,

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responsible institutions and research funding agencies. Although each party is likely to use somewhat different evaluation criteria, the sum total of the results should provide a comprehensive picture of the value of data and of data access regimes. Such evaluations should help to increase the support for open access among the scientific community and society at large.

......

M) Sustainability

Due consideration should be given to the sustainability of access to publicly funded research data as a key element of the research infrastructure. This means taking administrative responsibility for the measures to guarantee permanent access to data that have been determined to require long-term retention. This can be a difficult task, given that most research projects, and the public funding provided, have a limited duration, whereas ensuring access to the data produced is a long-term undertaking. Research funding agencies and research institutions, therefore, should consider the long-term preservation of data at the outset of each new project, and in particular, determine the most appropriate archival facilities for the data.

3. OECD Recommendation of the Council for Enhanced Access and More Effective Use of Public Sector Information, Organisation for Economic Co-operation and Development (OECD) (2008) [998]

THE COUNCIL

……

RECOMMENDS that, in establishing or reviewing their policies regarding access and use of public sector information, Member countries take due account of and implement the following principles, which provide a general framework for the wider and more effective use of public sector information and content and the generation of new uses from it:

Openness. Maximising the availability of public sector information for use and re-use based upon presumption of openness as the default rule to facilitate access and re-use. Developing a regime of access principles or assuming openness in public sector information as a default rule wherever possible no matter what the model of funding is for the development and maintenance of the information. Defining grounds of refusal or limitations, such as for protection of national security interests, personal privacy, preservation of private interests for example where protected by copyright, or the application of national access legislation and rules.

Access and transparent conditions for re-use. Encouraging broad non-discriminatory competitive access and conditions for re-use of public sector information, eliminating exclusive arrangements, and removing unnecessary restrictions on the ways in which it can be accessed, used, re-used, combined or shared, so that in principle all accessible information would be open to re-use by all. Improving access to information over the Internet and in electronic form. Making available and developing automated on-line licensing systems covering re-use in those cases where licensing is applied, taking into account the copyright principle below.

Asset lists. Strengthening awareness of what public sector information is available for access and re-use. This could take the form of information asset lists and inventories, preferably published on-line, as well as clear presentation of conditions to access and re-use at access points to the information.

Quality. Ensuring methodical data collection and curation practices to enhance quality and reliability including through cooperation of various government bodies involved in the creation, collection, processing, storing and distribution of public sector information.

Integrity. Maximising the integrity and availability of information through the use of best practices in information management. Developing and implementing appropriate safeguards to protect information from unauthorised modification or from intentional or unintentional denial of authorised access to information.

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[998] *Recommendation of the Council for Enhanced Access and More Effective Use of Public Sector Information* C(2008)36, pp 5-7, available at http://www.oecd.org/dataoecd/0/27/40826024.pdf accessed on 5 June 2009.

New technologies and long-term preservation. Improving interoperable archiving, search and retrieval technologies and related research including research on improving access and availability of public sector information in multiple languages, and ensuring development of the necessary related skills. Addressing technological obsolescence and challenges of long term preservation and access. Finding new ways for the digitisation of existing public sector information and content, the development of born-digital public sector information products and data, and the implementation of cultural digitisation projects (public broadcasters, digital libraries, museums, etc.) where market mechanisms do not foster effective digitisation.

Copyright. Intellectual property rights should be respected. There is a wide range of ways to deal with copyrights on public sector information, ranging from governments or private entities holding copyrights, to public sector information being copyright-free. Exercising copyright in ways that facilitate re-use (including waiving copyright and creating mechanisms that facilitate waiving of copyright where copyright owners are willing and able to do so, and developing mechanisms to deal with orphan works), and where copyright holders are in agreement, developing simple mechanisms to encourage wider access and use (including simple and effective licensing arrangements), and encouraging institutions and government agencies that fund works from outside sources to find ways to make these works widely accessible to the public.

Pricing. When public sector information is not provided free of charge, pricing public sector information transparently and consistently within and, as far as possible, across different public sector organisations so that it facilitates access and re-use and ensures competition. Where possible, costs charged to any user should not exceed marginal costs of maintenance and distribution, and in special cases extra costs for example of digitisation. Basing any higher pricing on clearly expressed policy grounds.

Competition. Ensuring that pricing strategies take into account considerations of unfair competition in situations where both public and business users provide value added services. Pursuing competitive neutrality, equality and timeliness of access where there is potential for cross-subsidisation from other government monopoly activities or reduced charges on government activities. Requiring public bodies to treat their own downstream/value-added activities on the same basis as their competitors for comparable purposes, including pricing. Particular attention should be paid to single sources of information resources. Promoting non-exclusive arrangements for disseminating information so that public sector information is open to all possible users and re-users on non-exclusive terms.

Redress mechanisms: Providing appropriate transparent complaints and appeals processes.

Public private partnerships. Facilitating public-private partnerships where appropriate and feasible in making public sector information available, for example by finding creative ways to finance the costs of digitisation, while increasing access and re-use rights of third parties.

International access and use. Seeking greater consistency in access regimes and administration to facilitate cross-border use and implementing other measures to improve cross-border interoperability, including in situations where there have been restrictions on non-public users. Supporting international co-operation and co-ordination for commercial re-use and non-commercial use. Avoiding fragmentation and promote greater public sector information and content, the development of born-digital public sector information products and data, and the implementation of cultural digitisation projects (public broadcasters, digital libraries, museums, etc.) where market mechanisms do not foster effective digitisation.

Best practices. Encouraging the wide sharing of best practices and exchange of information on enhanced implementation, educating users and re-users, building institutional capacity and practical measures for promoting re-use, cost and pricing models, copyright handling, monitoring performance and compliance, and their wider impacts on innovation, entrepreneurship, economic growth and social effects.

INVITES:

Member countries to disseminate this Recommendation throughout the public and private sectors, including governments, businesses and other international organisations to encourage all relevant participants to take the necessary steps to enhance access and promote more effective use of public sector information;

Non-Member economies to take account of this Recommendation and collaborate with Member countries in its implementation.

INSTRUCTS the OECD Committee for Information, Computer and Communications Policy to promote the implementation of this Recommendation and review it every three years to foster enhanced access and more effective use of public sector information.

4. Australian Government's Policy on Spatial Data Access and Pricing Principles ("the OSDM Policy") (2001)[999]

The basic elements of the Pricing Policy are:
* custodians of fundamental spatial data will make that data freely available through the Internet at no cost, as soon as appropriate technology becomes available within the custodian agency;
* fundamental spatial data distributed as packaged products [e.g. CDs] will be made available at a price not exceeding the marginal cost of transfer;
* fundamental spatial data distributed as customised products [e.g. significant staff time and other resources to generate] will be made available at a price not exceeding the full cost of transfer; and
* there will be no restrictions on commercial use or value-added activities related to fundamental spatial data, as defined in the Schedule to the Policy, although copyright may be reserved by the Commonwealth.

…….

The cost of providing fundamental spatial data as packaged products (eg CDs) or customised products (eg significant staff time to generate) is a legitimate charge to users – hence these will be made available at a price not exceeding marginal cost or full cost of transfer, respectively. However, data accessed through these mechanisms will also be available free over the Internet, as each agency develops this capability.

5. United States Office of Management and Budget's Circular A-130 on Management of Federal Information Resources (OMB Circular A-130) (2000)[1000]

7 Basic Considerations and Assumptions:

a. The Federal Government is the largest single producer, collector, consumer, and disseminator of information in the United States. Because of the extent of the government's information activities, and the dependence of those activities upon public cooperation, the management of Federal information resources is an issue of continuing importance to all Federal agencies, State and local governments, and the public.

b. Government information is a valuable national resource. It provides the public with knowledge of the government, society, and economy -- past, present, and future. It is a means to ensure the accountability of government, to manage the government's operations, to maintain the healthy performance of the economy, and is itself a commodity in the marketplace.

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[999] *A proposal for a Commonwealth Policy on Spatial Data Access and Pricing – The Report of the Commonwealth Interdepartmental Committee on Spatial Data Access and Pricing*, June 2001, pp 13-14, available at http://www.osdm.gov.au/Publications/Policies+and+guidelines/Downloads_GetFile.aspx?id=46 and http://www.osdm.gov.au/OSDM/Policies+and+Guidelines/Spatial+Data+Access+and+Pricing/default.aspx accessed on 5 June 2009.
[1000] Available at http://www.whitehouse.gov/omb/circulars/a130/a130trans4.pdf and http://www.whitehouse.gov/omb/circulars/a130/a130trans4.html.

c. The free flow of information between the government and the public is essential to a democratic society. It is also essential that the government minimize the Federal paperwork burden on the public, minimize the cost of its information activities, and maximize the usefulness of government information.

d. In order to minimize the cost and maximize the usefulness of government information, the expected public and private benefits derived from government information should exceed the public and private costs of the information, recognizing that the benefits to be derived from government information may not always be quantifiable.

e. The nation can benefit from government information disseminated both by Federal agencies and by diverse nonfederal parties, including State and local government agencies, educational and other not-for-profit institutions, and for-profit organizations.

f. Because the public disclosure of government information is essential to the operation of a democracy, the management of Federal information resources should protect the public's right of access to government information.

g. The individual's right to privacy must be protected in Federal Government information activities involving personal information.

h. Systematic attention to the management of government records is an essential component of sound public resources management which ensures public accountability. Together with records preservation, it protects the government's historical record and guards the legal and financial rights of the government and the public.

i. Strategic planning improves the operation of government programs. The agency strategic plan will shape the redesign of work processes and guide the development and maintenance of an Enterprise Architecture and a capital planning and investment control process. This management approach promotes the appropriate application of Federal information resources.

j. Because State and local governments are important producers of government information for many areas such as health, social welfare, labor, transportation, and education, the Federal Government must cooperate with these governments in the management of information resources.

k. The open and efficient exchange of scientific and technical government information, subject to applicable national security controls and the proprietary rights of others, fosters excellence in scientific research and effective use of Federal research and development funds.

l. Information technology is not an end in itself. It is one set of resources that can improve the effectiveness and efficiency of Federal program delivery.

m. Federal Government information resources management policies and activities can affect, and be affected by, the information policies and activities of other nations.

n. Users of Federal information resources must have skills, knowledge, and training to manage information resources, enabling the Federal government to effectively serve the public through automated means.

o. The application of up-to-date information technology presents opportunities to promote fundamental changes in agency structures, work processes, and ways of interacting with the public that improve the effectiveness and efficiency of Federal agencies.

p. The availability of government information in diverse media, including electronic formats, permits agencies and the public greater flexibility in using the information.

q. Federal managers with program delivery responsibilities should recognize the importance of information resources management to mission performance.

r. The Chief Information Officers Council and the Information Technology Resources Board will help in the development and operation of interagency and interoperable shared information resources to support the performance of government missions.[1001]

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8 Policy

a. Information Management Policy
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5. How must an agency provide information to the public?

Agencies have a responsibility to provide information to the public consistent with their missions. Agencies will discharge this responsibility by:

(a) Providing information, as required by law, describing agency organization, activities, programs, meetings, systems of records, and other information holdings, and how the public may gain access to agency information resources;

(b) Providing access to agency records under provisions of the Freedom of Information Act and the Privacy Act, subject to the protections and limitations provided for in these Acts;

(c) Providing such other information as is necessary or appropriate for the proper performance of agency functions; and in determining whether and how to disseminate information to the public, agencies will:

  (i) Disseminate information in a manner that achieves the best balance between the goals of maximizing the usefulness of the information and minimizing the cost to the government and the public;
  (ii) Disseminate information dissemination products on equitable and timely terms;
  (iii) Take advantage of all dissemination channels, Federal and nonfederal, including State and local governments, libraries and private sector entities, in discharging agency information dissemination responsibilities;
  (iv) Help the public locate government information maintained by or for the agency.[1002]

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7. How must agencies avoid improperly restrictive practices?

Agencies will:

(a) Avoid establishing, or permitting others to establish on their behalf, exclusive, restricted, or other distribution arrangements that interfere with the availability of information dissemination products on a timely and equitable basis;

(b) Avoid establishing restrictions or regulations, including the charging of fees or royalties, on the reuse, resale, or redissemination of Federal information dissemination products by the public; and,

(c) **Set user charges for information dissemination products at a level sufficient to recover the cost of dissemination but no higher. They must exclude from calculation of the charges costs associated with original collection and processing of the information**. Exceptions to this policy are:

[1001] This extract from OMB Circular A-130 is reproduced in the Office of Spatial Data Management's *A Proposal for a Commonwealth Policy on Spatial Data Access and Pricing* (OSDM Policy), 2001, paragraph [7].
[1002] Clause 8 (paragraph 5) available at http://www.whitehouse.gov/omb/circulars/a130/a130trans4.html#8 and http://www.whitehouse.gov/omb/circulars/a130/a130trans4.pdf accessed 5 June 2009.

(i) Where statutory requirements are at variance with the policy;

(ii) Where the agency collects, processes, and disseminates the information for the benefit of a specific identifiable group beyond the benefit to the general public;

(iii) Where the agency plans to establish user charges at less than cost of dissemination because of a determination that higher charges would constitute a significant barrier to properly performing the agency's functions, including reaching members of the public whom the agency has a responsibility to inform; or

(iv) Where the Director of OMB determines an exception is warranted.[1003]

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Appendix IV to OMB Circular No. A-130

Analysis of Key Sections

The information policies contained in the [Paperwork Reduction Act] PRA and Circular A-130 are based on the premise that government information is a valuable national resource, and that the economic benefits to society are maximized when government information is available in a timely and equitable manner to all. Maximizing the benefits of government information to society depends, in turn, on fostering diversity among the entities involved in disseminating it. These include for-profit and not-for-profit entities, such as information vendors and libraries, as well as State, local and tribal governments. The policies on charging the cost of dissemination and against restrictive practices contained in the PRA and Circular A-130 are aimed at achieving this goal.

Other nations do not necessarily share these values. Although an increasing number are embracing the concept of equitable and unrestricted access to public information -- particularly scientific, environmental, and geographic information of great public benefit -- other nations are treating their information as a commodity to be "commercialized". Whereas the Copyright Act, 17 U.S.C. 105, has long provided that "[c]opyright protection under this title is not available for any work of the United States Government," some other nations take advantage of their domestic copyright laws that do permit government copyright and assert a monopoly on certain categories of information in order to maximize revenues. Such arrangements tend to preclude other entities from developing markets for the information or otherwise disseminating the information in the public interest.[1004]

6. Directive 2003/98/EC of the European Parliament and of the Council of 17 November 2003 on the re-use of the public sector information [2003] OJ L 345/90 ("the PSI Directive")[1005]

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 95 thereof,

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[1003] Clause 8 (paragraph 7) available at http://www.whitehouse.gov/omb/circulars/a130/a130trans4.html#8 and http://www.whitehouse.gov/omb/circulars/a130/a130trans4.pdf accessed 5 June 2009.

[1004] Attachment E, available at http://www.whitehouse.gov/omb/circulars/a130/a130appendix_iv.html and http://www.whitehouse.gov/omb/circulars/a130/appendix_iv.pdf accessed 5 June 2009.

[1005] European Parliament and Council of the European Union, Directive 2003/98/EC of the European Parliament and of the Council of 17 November 2003 on the re-use of the public sector information [2003] OJ L 345/90, http://www.epsiplatform.com/reports/european_directive_on_psi/directive_2003_98_ec and http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32003L0098:EN:HTML.

Having regard to the proposal from the Commission(1),

Having regard to the opinion of the European Economic and Social Committee(2),

Having regard to the opinion of the Committee of the Regions(3),

Acting in accordance with the procedure set out in Article 251 of the Treaty(4),

Whereas:

(1) The Treaty provides for the establishment of an internal market and of a system ensuring that competition in the internal market is not distorted. Harmonisation of the rules and practices in the Member States relating to the exploitation of public sector information contributes to the achievement of these objectives.

(2) The evolution towards an information and knowledge society influences the life of every citizen in the Community, inter alia, by enabling them to gain new ways of accessing and acquiring knowledge.

(3) Digital content plays an important role in this evolution. Content production has given rise to rapid job creation in recent years and continues to do so. Most of these jobs are created in small emerging companies.

(4) The public sector collects, produces, reproduces and disseminates a wide range of information in many areas of activity, such as social, economic, geographical, weather, tourist, business, patent and educational information.

(5) One of the principal aims of the establishment of an internal market is the creation of conditions conducive to the development of Community-wide services. Public sector information is an important primary material for digital content products and services and will become an even more important content resource with the development of wireless content services. Broad cross-border geographical coverage will also be essential in this context. Wider possibilities of re-using public sector information should inter alia allow European companies to exploit its potential and contribute to economic growth and job creation.

(6) There are considerable differences in the rules and practices in the Member States relating to the exploitation of public sector information resources, which constitute barriers to bringing out the full economic potential of this key document resource. Traditional practice in public sector bodies in exploiting public sector information has developed in very disparate ways. That should be taken into account. Minimum harmonisation of national rules and practices on the re-use of public sector documents should therefore be undertaken, in cases where the differences in national regulations and practices or the absence of clarity hinder the smooth functioning of the internal market and the proper development of the information society in the Community.

(7) Moreover, without minimum harmonisation at Community level, legislative activities at national level, which have already been initiated in a number of Member States in order to respond to the technological challenges, might result in even more significant differences. The impact of such legislative differences and uncertainties will become more significant with the further development of the information society, which has already greatly increased cross-border exploitation of information.

(8) A general framework for the conditions governing re-use of public sector documents is needed in order to ensure fair, proportionate and non-discriminatory conditions for the re-use of such information. Public sector bodies collect, produce, reproduce and disseminate documents to fulfil their public tasks. Use of such documents for other reasons constitutes a re-use. Member States' policies can go beyond the minimum standards established in this Directive, thus allowing for more extensive re-use.

(9) This Directive does not contain an obligation to allow re-use of documents. The decision whether or not to authorise re-use will remain with the Member States or the public sector body concerned. This Directive should apply to documents that are made accessible for re-use when public sector bodies license, sell, disseminate, exchange or give out information. To avoid cross-subsidies, re-use should include further use of documents within the organisation itself for activities falling outside the scope of its public tasks. Activities falling outside the public task will typically include supply of documents that are produced and charged for exclusively on a commercial basis and in competition with others in the market. The definition of "document" is not intended to cover computer programmes. The Directive builds on the existing access regimes in the Member States and does not change the national rules for access to documents. It does not apply in cases in which citizens or companies can, under the relevant access regime, only obtain a document if

they can prove a particular interest. At Community level, Articles 41 (right to good administration) and 42 of the Charter of Fundamental Rights of the European Union recognise the right of any citizen of the Union and any natural or legal person residing or having its registered office in a Member State to have access to European Parliament, Council and Commission documents. Public sector bodies should be encouraged to make available for re-use any documents held by them. Public sector bodies should promote and encourage re-use of documents, including official texts of a legislative and administrative nature in those cases where the public sector body has the right to authorise their re-use.

(10) The definitions of "public sector body" and "body governed by public law" are taken from the public procurement Directives (92/50/EEC(5), 93/36/EEC(6) and 93/37/EEC(7) and 98/4/EC(8)). Public undertakings are not covered by these definitions.

(11) This Directive lays down a generic definition of the term "document", in line with developments in the information society. It covers any representation of acts, facts or information - and any compilation of such acts, facts or information - whatever its medium (written on paper, or stored in electronic form or as a sound, visual or audiovisual recording), held by public sector bodies. A document held by a public sector body is a document where the public sector body has the right to authorise re-use.

(12) The time limit for replying to requests for re-use should be reasonable and in line with the equivalent time for requests to access the document under the relevant access regimes. Reasonable time limits throughout the Union will stimulate the creation of new aggregated information products and services at pan-European level. Once a request for re-use has been granted, public sector bodies should make the documents available in a timeframe that allows their full economic potential to be exploited. This is particularly important for dynamic content (e.g. traffic data), the economic value of which depends on the immediate availability of the information and of regular updates. Should a licence be used, the timely availability of documents may be a part of the terms of the licence.

(13) The possibilities for re-use can be improved by limiting the need to digitise paper-based documents or to process digital files to make them mutually compatible. Therefore, public sector bodies should make documents available in any pre-existing format or language, through electronic means where possible and appropriate. Public sector bodies should view requests for extracts from existing documents favourably when to grant such a request would involve only a simple operation. Public sector bodies should not, however, be obliged to provide an extract from a document where this involves disproportionate effort. To facilitate re-use, public sector bodies should make their own documents available in a format which, as far as possible and appropriate, is not dependent on the use of specific software. Where possible and appropriate, public sector bodies should take into account the possibilities for the re-use of documents by and for people with disabilities.

(14) Where charges are made, the total income should not exceed the total costs of collecting, producing, reproducing and disseminating documents, together with a reasonable return on investment, having due regard to the self-financing requirements of the public sector body concerned, where applicable. Production includes creation and collation, and dissemination may also include user support. Recovery of costs, together with a reasonable return on investment, consistent with applicable accounting principles and the relevant cost calculation method of the public sector body concerned, constitutes an upper limit to the charges, as any excessive prices should be precluded. The upper limit for charges set in this Directive is without prejudice to the right of Member States or public sector bodies to apply lower charges or no charges at all, and Member States should encourage public sector bodies to make documents available at charges that do not exceed the marginal costs for reproducing and disseminating the documents.

(15) Ensuring that the conditions for re-use of public sector documents are clear and publicly available is a pre-condition for the development of a Community-wide information market. Therefore all applicable conditions for the re-use of the documents should be made clear to the potential re-users. Member States should encourage the creation of indices accessible on line, where appropriate, of available documents so as to promote and facilitate requests for re-use. Applicants for re-use of documents should be informed of available means of redress relating to decisions or practices affecting them. This will be particularly important for SMEs which may not be familiar with interactions with public sector bodies from other Member States and corresponding means of redress.

(16) Making public all generally available documents held by the public sector - concerning not only the political process but also the legal and administrative process - is a fundamental instrument for extending the right to knowledge, which is a basic principle of democracy. This objective is applicable to institutions at every level, be it local, national or international.

(17) In some cases the re-use of documents will take place without a licence being agreed. In other cases a licence will be issued imposing conditions on the re-use by the licensee dealing with issues such as liability, the proper use of documents, guaranteeing non-alteration and the acknowledgement of source. If public sector bodies license documents for re-use, the licence conditions should be fair and transparent. Standard licences that are available online may also play an important role in this respect. Therefore Member States should provide for the availability of standard licences.

(18) If the competent authority decides to no longer make available certain documents for re-use, or to cease updating these documents, it should make these decisions publicly known, at the earliest opportunity, via electronic means whenever possible.

(19) Conditions for re-use should be non-discriminatory for comparable categories of re-use. This should, for example, not prevent the exchange of information between public sector bodies free of charge for the exercise of public tasks, whilst other parties are charged for the re-use of the same documents. Neither should it prevent the adoption of a differentiated charging policy for commercial and non-commercial re-use.

(20) Public sector bodies should respect competition rules when establishing the principles for re-use of documents avoiding as far as possible exclusive agreements between themselves and private partners. However, in order to provide a service of general economic interest, an exclusive right to re-use specific public sector documents may sometimes be necessary. This may be the case if no commercial publisher would publish the information without such an exclusive right.

(21) This Directive should be implemented and applied in full compliance with the principles relating to the protection of personal data in accordance with Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and of the free movement of such data(9).

(22) The intellectual property rights of third parties are not affected by this Directive. For the avoidance of doubt, the term "intellectual property rights" refers to copyright and related rights only (including sui generis forms of protection). This Directive does not apply to documents covered by industrial property rights, such as patents, registered designs and trademarks. The Directive does not affect the existence or ownership of intellectual property rights of public sector bodies, nor does it limit the exercise of these rights in any way beyond the boundaries set by this Directive. The obligations imposed by this Directive should apply only insofar as they are compatible with the provisions of international agreements on the protection of intellectual property rights, in particular the Berne Convention for the Protection of Literary and Artistic Works (the Berne Convention) and the Agreement on Trade-Related Aspects of Intellectual Property Rights (the TRIPS Agreement). Public sector bodies should, however, exercise their copyright in a way that facilitates re-use.

(23) Tools that help potential re-users to find documents available for re-use and the conditions for re-use can facilitate considerably the cross-border use of public sector documents. Member States should therefore ensure that practical arrangements are in place that help re-users in their search for documents available for re-use. Assets lists, accessible preferably online, of main documents (documents that are extensively re-used or that have the potential to be extensively re-used), and portal sites that are linked to decentralised assets lists are examples of such practical arrangements.

(24) This Directive is without prejudice to Directive 2001/29/EC of the European Parliament and of the Council of 22 May 2001 on the harmonisation of certain aspects of copyright and related rights in the information society(10) and Directive 96/9/EC of the European Parliament and of the Council of 11 March 1996 on the legal protection of databases(11). It spells out the conditions within which public sector bodies can exercise their intellectual property rights in the internal information market when allowing re-use of documents.

(25) Since the objectives of the proposed action, namely to facilitate the creation of Community-wide information products and services based on public sector documents, to enhance an effective cross-border use of public sector documents by private companies for added-value information products and services and to limit distortions of competition on the Community market, cannot be sufficiently achieved by the Member States and can therefore, in view of the intrinsic Community scope and impact of the said action, be better achieved at Community level, the Community may adopt measures, in accordance with the principle of subsidiarity as set out in Article 5 of the Treaty. In accordance with the principle of proportionality, as set out in that Article, this Directive does not go beyond what is necessary in order to achieve those objectives. This Directive should achieve minimum harmonisation, thereby avoiding further disparities between the Member States in dealing with the re-use of public sector documents,

HAVE ADOPTED THIS DIRECTIVE:

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CHAPTER I
GENERAL PROVISIONS

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Article 1
Subject matter and scope

1. This Directive establishes a minimum set of rules governing the re-use and the practical means of facilitating re-use of existing documents held by public sector bodies of the Member States.

2. This Directive shall not apply to:
(a)   documents the supply of which is an activity falling outside the scope of the public task of the public sector bodies concerned as defined by law or by other binding rules in the Member State, or in the absence of such rules as defined in line with common administrative practice in the Member State in question;
(b)   documents for which third parties hold intellectual property rights;
(c)   documents which are excluded from access by virtue of the access regimes in the Member States, including on the grounds of:
-      the protection of national security (i.e. State security), defence, or public security,

-      statistical or commercial confidentiality;

(d)   documents held by public service broadcasters and their subsidiaries, and by other bodies or their subsidiaries for the fulfilment of a public service broadcasting remit;
(e)   documents held by educational and research establishments, such as schools, universities, archives, libraries and research facilities including, where relevant, organisations established for the transfer of research results;
(f)   documents held by cultural establishments, such as museums, libraries, archives, orchestras,   operas, ballets and theatres.

3. This Directive builds on and is without prejudice to the existing access regimes in the Member States. This Directive shall not apply in cases in which citizens or companies have to prove a particular interest under the access regime to obtain access to the documents.

4. This Directive leaves intact and in no way affects the level of protection of individuals with regard to the processing of personal data under the provisions of Community and national law, and in particular does not alter the obligations and rights set out in Directive 95/46/EC.

5. The obligations imposed by this Directive shall apply only insofar as they are compatible with the provisions of international agreements on the protection of intellectual property rights, in particular the Berne Convention and the TRIPS Agreement.

Article 2
Definitions

For the purpose of this Directive the following definitions shall apply:
1.   "public sector body" means the State, regional or local authorities, bodies governed by public law and associations formed by one or several such authorities or one or several such bodies governed by public law;
2.   "body governed by public law" means any body:
(a)   established for the specific purpose of meeting needs in the general interest, not having an industrial or commercial character; and
(b)   having legal personality; and

(c)   financed, for the most part by the State, or regional or local authorities, or other bodies governed by public law; or subject to management supervision by those bodies; or having an administrative, managerial or supervisory board, more than half of whose members are appointed by the State, regional or local authorities or by other bodies governed by public law;

3.   "document" means:
(a) any content whatever its medium (written on paper or stored in electronic form or as a sound, visual or audiovisual recording);
(b) any part of such content;

4.   "re-use" means the use by persons or legal entities of documents held by public sector bodies, for commercial or non-commercial purposes other than the initial purpose within the public task for which the documents were produced. Exchange of documents between public sector bodies purely in pursuit of their public tasks does not constitute re-use;

5.   "personal data" means data as defined in Article 2(a) of Directive 95/46/EC.

Article 3
General principle

Member States shall ensure that, where the re-use of documents held by public sector bodies is allowed, these documents shall be re-usable for commercial or non-commercial purposes in accordance with the conditions set out in Chapters III and IV. Where possible, documents shall be made available through electronic means.

CHAPTER II
REQUESTS FOR RE-USE

Article 4
Requirements applicable to the processing of requests for re-use

1. Public sector bodies shall, through electronic means where possible and appropriate, process requests for re-use and shall make the document available for re-use to the applicant or, if a licence is needed, finalise the licence offer to the applicant within a reasonable time that is consistent with the time-frames laid down for the processing of requests for access to documents.

2. Where no time limits or other rules regulating the timely provision of documents have been established, public sector bodies shall process the request and shall deliver the documents for re-use to the applicant or, if a licence is needed, finalise the licence offer to the applicant within a timeframe of not more than 20 working days after its receipt. This timeframe may be extended by another 20 working days for extensive or complex requests. In such cases the applicant shall be notified within three weeks after the initial request that more time is needed to process it.

3. In the event of a negative decision, the public sector bodies shall communicate the grounds for refusal to the applicant on the basis of the relevant provisions of the access regime in that Member State or of the national provisions adopted pursuant to this Directive, in particular Article 1(2)(a), (b) and (c), or Article 3. Where a negative decision is based on Article 1(2)(b), the public sector body shall include a reference to the natural or legal person who is the rightholder, where known, or alternatively to the licensor from which the public sector body has obtained the relevant material.

4. Any negative decision shall contain a reference to the means of redress in case the applicant wishes to appeal the decision.

5. Public sector bodies covered under Article 1(2)(d), (e) and (f) shall not be required to comply with the requirements of this Article.

CHAPTER III

CONDITIONS FOR RE-USE

Article 5
Available formats

1. Public sector bodies shall make their documents available in any pre-existing format or language, through electronic means where possible and appropriate. This shall not imply an obligation for public sector bodies to create or adapt documents in order to comply with the request, nor shall it imply an obligation to provide extracts from documents where this would involve disproportionate effort, going beyond a simple operation.

2. On the basis of this Directive, public sector bodies cannot be required to continue the production of a certain type of documents with a view to the re-use of such documents by a private or public sector organisation.

Article 6
Principles governing charging

Where charges are made, the total income from supplying and allowing re-use of documents shall not exceed the cost of collection, production, reproduction and dissemination, together with a reasonable return on investment. Charges should be cost-oriented over the appropriate accounting period and calculated in line with the accounting principles applicable to the public sector bodies involved.

Article 7
Transparency

Any applicable conditions and standard charges for the re-use of documents held by public sector bodies shall be pre-established and published, through electronic means where possible and appropriate. On request, the public sector body shall indicate the calculation basis for the published charge. The public sector body in question shall also indicate which factors will be taken into account in the calculation of charges for atypical cases. Public sector bodies shall ensure that applicants for re-use of documents are informed of available means of redress relating to decisions or practices affecting them.

Article 8
Licences

1. Public sector bodies may allow for re-use of documents without conditions or may impose conditions, where appropriate through a licence, dealing with relevant issues. These conditions shall not unnecessarily restrict possibilities for re-use and shall not be used to restrict competition.

2. In Member States where licences are used, Member States shall ensure that standard licences for the re-use of public sector documents, which can be adapted to meet particular licence applications, are available in digital format and can be processed electronically. Member States shall encourage all public sector bodies to use the standard licences.

Article 9
Practical arrangements

Member States shall ensure that practical arrangements are in place that facilitate the search for documents available for re-use, such as assets lists, accessible preferably online, of main documents, and portal sites that are linked to decentralised assets lists.

CHAPTER IV
NON-DISCRIMINATION AND FAIR TRADING

Article 10
Non-discrimination

1. Any applicable conditions for the re-use of documents shall be non-discriminatory for comparable categories of re-use.

2. If documents are re-used by a public sector body as input for its commercial activities which fall outside the scope of its public tasks, the same charges and other conditions shall apply to the supply of the documents for those activities as apply to other users.

Article 11
Prohibition of exclusive arrangements

1. The re-use of documents shall be open to all potential actors in the market, even if one or more market players already exploit added-value products based on these documents. Contracts or other arrangements between the public sector bodies holding the documents and third parties shall not grant exclusive rights.

2. However, where an exclusive right is necessary for the provision of a service in the public interest, the validity of the reason for granting such an exclusive right shall be subject to regular review, and shall, in any event, be reviewed every three years. The exclusive arrangements established after the entry into force of this Directive shall be transparent and made public.

3. Existing exclusive arrangements that do not qualify for the exception under paragraph 2 shall be terminated at the end of the contract or in any case not later than 31 December 2008.

CHAPTER V
FINAL PROVISIONS

Article 12
Implementation

Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive by 1 July 2005. They shall forthwith inform the Commission thereof.

When Member States adopt those measures, they shall contain a reference to this Directive or be accompanied by such a reference on the occasion of their official publication. Member States shall determine how such reference is to be made.

Article 13
Review

1. The Commission shall carry out a review of the application of this Directive before 1 July 2008 and shall communicate the results of this review, together with any proposals for modifications of the Directive, to the European Parliament and the Council.

2. The review shall in particular address the scope and impact of this Directive, including the extent of the increase in re-use of public sector documents, the effects of the principles applied to charging and the re-use of official texts of a legislative and administrative nature, as well as further possibilities of improving the proper functioning of the internal market and the development of the European content industry.

Article 14
Entry into force

This Directive shall enter into force on the day of its publication in the Official Journal of the European Union.

Article 15
Addressees

This Directive is addressed to the Member States.
Done at Brussels, 17 November 2003.
For the Parliament
P. Cox
The President
For the Council
G. Alemanno
The President

(1) OJ C 227 E, 24.9.2002, p. 382.
(2) OJ C 85, 8.4.2003, p. 25.
(3) OJ C 73, 26.3.2003, p. 38.
(4) Opinion of the European Parliament of 12 February 2003 (not yet published in the Official Journal), Council Common Position of 26 May 2003 (OJ C 159 E, 8.7.2003, p. 1) and Position of the European Parliament of 25 September 2003 (not yet published in the Official Journal). Council Decision of 27 October 2003.
(5) OJ L 209, 24.7.1992, p. 1. Directive as last amended by Commission Directive 2001/78/EC (OJ L 285, 29.10.2001, p. 1).
(6) OJ L 199, 9.8.1993, p. 1. Directive as last amended by Commission Directive 2001/78/EC.
(7) OJ L 199, 9.8.1993, p. 54. Directive as last amended by Commission Directive 2001/78/EC.
(8) OJ L 101, 1.4.1998, p. 1.
(9) OJ L 281, 23.11.1995, p. 31.
(10) OJ L 167, 22.6.2001, p. 10.
(11) OJ L 77, 27.3.1996, p. 20.

7. Directive 2003/4/EC of the European Parliament and of the Council of 28 January 2003 on Public Access to Environmental Information and Repealing Council Directive 90/313/EEC (2003) ("the Environmental Information Directive")[1006]

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 175(1) thereof,

Having regard to the proposal from the Commission(1),

Having regard to the opinion of the European Economic and Social Committee(2),

Having regard to the opinion of the Committee of the Regions(3),

Acting in accordance with the procedure laid down in Article 251 of the Treaty(4) in the light of the joint text approved by the Conciliation Committee on 8 November 2002,

Whereas:

(1) Increased public access to environmental information and the dissemination of such information contribute to a greater awareness of environmental matters, a free exchange of views, more effective participation by the public in environmental decision-making and, eventually, to a better environment.

(2) Council Directive 90/313/EEC of 7 June 1990 on the freedom of access to information on the environment(5) initiated a process of change in the manner in which public authorities approach the issue of openness and transparency, establishing measures for the exercise of the right of public access to environmental information which should be developed and continued. This Directive expands the existing access granted under Directive 90/313/EEC.

(3) Article 8 of that Directive requires Member States to report to the Commission on the experience gained, in the light of which the Commission is required to make a report to the European Parliament and to the Council together with any proposal for revision of the Directive which it may consider appropriate.

(4) The report produced under Article 8 of that Directive identifies concrete problems encountered in the practical application of the Directive.

(5) On 25 June 1998 the European Community signed the UN/ECE Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters ("the Aarhus Convention"). Provisions of Community law must be consistent with that Convention with a view to its conclusion by the European Community.

(6) It is appropriate in the interest of increased transparency to replace Directive 90/313/EEC rather than to amend it, so as to provide interested parties with a single, clear and coherent legislative text.

(7) Disparities between the laws in force in the Member States concerning access to environmental information held by public authorities can create inequality within the Community as regards access to such information or as regards conditions of competition.

[1006] European Parliament and Council of the European Union, Directive 2003/4/EC of The European Parliament And Of The Council Of 28 January 2003 On Public Access To Environmental Information And Repealing Council Directive 90/313/EEC OJL 041 , 14/02/2003 P. 0026 – 0032 http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32003L0004:EN:HTML.

(8) It is necessary to ensure that any natural and legal person has a right of access to environmental information held by or for public authorities without his having to state an interest.

(9) It is also necessary that public authorities make available and disseminate environmental information to the general public to the widest extent possible, in particular by using information and communication technologies. The future development of these technologies should be taken into account in the reporting on, and reviewing of, this Directive.

(10) The definition of environmental information should be clarified so as to encompass information in any form on the state of the environment, on factors, measures or activities affecting or likely to affect the environment or designed to protect it, on cost-benefit and economic analyses used within the framework of such measures or activities and also information on the state of human health and safety, including the contamination of the food chain, conditions of human life, cultural sites and built structures in as much as they are, or may be, affected by any of those matters.

(11) To take account of the principle in Article 6 of the Treaty, that environmental protection requirements should be integrated into the definition and implementation of Community policies and activities, the definition of public authorities should be expanded so as to encompass government or other public administration at national, regional or local level whether or not they have specific responsibilities for the environment. The definition should likewise be expanded to include other persons or bodies performing public administrative functions in relation to the environment under national law, as well as other persons or bodies acting under their control and having public responsibilities or functions in relation to the environment.

(12) Environmental information which is physically held by other bodies on behalf of public authorities should also fall within the scope of this Directive.

(13) Environmental information should be made available to applicants as soon as possible and within a reasonable time and having regard to any timescale specified by the applicant.

(14) Public authorities should make environmental information available in the form or format requested by an applicant unless it is already publicly available in another form or format or it is reasonable to make it available in another form or format. In addition, public authorities should be required to make all reasonable efforts to maintain the environmental information held by or for them in forms or formats that are readily reproducible and accessible by electronic means.

(15) Member States should determine the practical arrangements under which such information is effectively made available. These arrangements shall guarantee that the information is effectively and easily accessible and progressively becomes available to the public through public telecommunications networks, including publicly accessible lists of public authorities and registers or lists of environmental information held by or for public authorities.

(16) The right to information means that the disclosure of information should be the general rule and that public authorities should be permitted to refuse a request for environmental information in specific and clearly defined cases. Grounds for refusal should be interpreted in a restrictive way, whereby the public interest served by disclosure should be weighed against the interest served by the refusal. The reasons for a refusal should be provided to the applicant within the time limit laid down in this Directive.

(17) Public authorities should make environmental information available in part where it is possible to separate out any information falling within the scope of the exceptions from the rest of the information requested.

(18) Public authorities should be able to make a charge for supplying environmental information but such a charge should be reasonable. This implies that, as a general rule, charges may not exceed actual costs of producing the material in question. Instances where advance payment will be required should be limited. In particular cases, where public authorities make available environmental information on a commercial basis, and where this is necessary in order to guarantee the continuation of collecting and publishing such information, a market-based charge is considered to be reasonable; an advance payment may be required. A schedule of charges should be published and made available to applicants together with information on the circumstances in which a charge may be levied or waived.

(19) Applicants should be able to seek an administrative or judicial review of the acts or omissions of a public authority in relation to a request.

(20) Public authorities should seek to guarantee that when environmental information is compiled by them or on their behalf, the information is comprehensible, accurate and comparable. As this is an important factor in assessing the quality of the information supplied the method used in compiling the information should also be disclosed upon request.

(21) In order to increase public awareness in environmental matters and to improve environmental protection, public authorities should, as appropriate, make available and disseminate information on the environment which is relevant to their functions, in particular by means of computer telecommunication and/or electronic technology, where available.

(22) This Directive should be evaluated every four years, after its entry into force, in the light of experience and after submission of the relevant reports by the Member States, and be subject to revision on that basis. The Commission should submit an evaluation report to the European Parliament and the Council.

(23) Since the objectives of the proposed Directive cannot be sufficiently achieved by the Member States and can therefore be better achieved at Community level, the Community may adopt measures, in accordance with the principle of subsidiarity as set out in Article 5 of the Treaty. In accordance with the principle of proportionality, as set out in that Article, this Directive does not go beyond what is necessary in order to achieve those objectives.

(24) The provisions of this Directive shall not affect the right of a Member State to maintain or introduce measures providing for broader access to information than required by this Directive,

HAVE ADOPTED THIS DIRECTIVE:

Article 1
Objectives

The objectives of this Directive are:
(a)   to guarantee the right of access to environmental information held by or for public authorities and to set out the basic terms and conditions of, and practical arrangements for, its exercise; and
(b)   to ensure that, as a matter of course, environmental information is progressively made available and disseminated to the public in order to achieve the widest possible systematic availability and dissemination to the public of environmental information. To this end the use, in particular, of computer telecommunication and/or electronic technology, where available, shall be promoted.

Article 2
Definitions

For the purposes of this Directive:
1.   "Environmental information" shall mean any information in written, visual, aural, electronic or any other material form on:
(a)   the state of the elements of the environment, such as air and atmosphere, water, soil, land, landscape and natural sites including wetlands, coastal and marine areas, biological diversity and its components, including genetically modified organisms, and the interaction among these elements;
(b)   factors, such as substances, energy, noise, radiation or waste, including radioactive waste, emissions, discharges and other releases into the environment, affecting or likely to affect the elements of the environment referred to in (a);
(c)   measures (including administrative measures), such as policies, legislation, plans, programmes, environmental agreements, and activities affecting or likely to affect the elements and factors referred to in (a) and (b) as well as measures or activities designed to protect those elements;
(d)   reports on the implementation of environmental legislation;
(e)   cost-benefit and other economic analyses and assumptions used within the framework of the measures and activities referred to in (c); and
(f)   the state of human health and safety, including the contamination of the food chain, where relevant, conditions of human life, cultural sites and built structures inasmuch as they are or may be affected by the state of the

elements of the environment referred to in (a) or, through those elements, by any of the matters referred to in (b) and (c).

2.   "Public authority" shall mean:

(a)   government or other public administration, including public advisory bodies, at national, regional or local level;

(b)   any natural or legal person performing public administrative functions under national law, including specific duties, activities or services in relation to the environment; and

(c)   any natural or legal person having public responsibilities or functions, or providing public services, relating to the environment under the control of a body or person falling within (a) or (b).
Member States may provide that this definition shall not include bodies or institutions when acting in a judicial or legislative capacity. If their constitutional provisions at the date of adoption of this Directive make no provision for a review procedure within the meaning of Article 6, Member States may exclude those bodies or institutions from that definition.

3.   "Information held by a public authority" shall mean environmental information in its possession which has been produced or received by that authority.

4.   "Information held for a public authority" shall mean environmental information which is physically held by a natural or legal person on behalf of a public authority.

5.   "Applicant" shall mean any natural or legal person requesting environmental information.

6.   "Public" shall mean one or more natural or legal persons, and, in accordance with national legislation or practice, their associations, organisations or groups.

Article 3
Access to environmental information upon request

1. Member States shall ensure that public authorities are required, in accordance with the provisions of this Directive, to make available environmental information held by or for them to any applicant at his request and without his having to state an interest.

2. Subject to Article 4 and having regard to any timescale specified by the applicant, environmental information shall be made available to an applicant:

(a)   as soon as possible or, at the latest, within one month after the receipt by the public authority referred to in paragraph 1 of the applicant's request; or

(b)   within two months after the receipt of the request by the public authority if the volume and the complexity of the information is such that the one-month period referred to in (a) cannot be complied with. In such cases, the applicant shall be informed as soon as possible, and in any case before the end of that one-month period, of any such extension and of the reasons for it.

3. If a request is formulated in too general a manner, the public authority shall as soon as possible, and at the latest within the timeframe laid down in paragraph 2(a), ask the applicant to specify the request and shall assist the applicant in doing so, e.g. by providing information on the use of the public registers referred to in paragraph 5(c). The public authorities may, where they deem it appropriate, refuse the request under Article 4(1)(c).

4. Where an applicant requests a public authority to make environmental information available in a specific form or format (including in the form of copies), the public authority shall make it so available unless:

(a)   it is already publicly available in another form or format, in particular under Article 7, which is easily accessible by applicants; or

(b)   it is reasonable for the public authority to make it available in another form or format, in which case reasons shall be given for making it available in that form or format.

For the purposes of this paragraph, public authorities shall make all reasonable efforts to maintain environmental information held by or for them in forms or formats that are readily reproducible and accessible by computer telecommunications or by other electronic means.

The reasons for a refusal to make information available, in full or in part, in the form or format requested shall be provided to the applicant within the time limit referred to in paragraph 2(a).

5. For the purposes of this Article, Member States shall ensure that:
(a)   officials are required to support the public in seeking access to information;
(b)   lists of public authorities are publicly accessible; and
(c)   the practical arrangements are defined for ensuring that the right of access to environmental information can be effectively exercised, such as:

- the designation of information officers;

- the establishment and maintenance of facilities for the examination of the information required,

- registers or lists of the environmental information held by public authorities or information points, with clear indications of where such information can be found.

Member States shall ensure that public authorities inform the public adequately of the rights they enjoy as a result of this Directive and to an appropriate extent provide information, guidance and advice to this end.

Article 4
Exceptions

1. Member States may provide for a request for environmental information to be refused if:
(a)   the information requested is not held by or for the public authority to which the request is addressed. In such a case, where that public authority is aware that the information is held by or for another public authority, it shall, as soon as possible, transfer the request to that other authority and inform the applicant accordingly or inform the applicant of the public authority to which it believes it is possible to apply for the information requested;
(b)   the request is manifestly unreasonable;
(c)   the request is formulated in too general a manner, taking into account Article 3(3);
(d)   the request concerns material in the course of completion or unfinished documents or data;
(e)   the request concerns internal communications, taking into account the public interest served by disclosure.
Where a request is refused on the basis that it concerns material in the course of completion, the public authority shall state the name of the authority preparing the material and the estimated time needed for completion.

2. Member States may provide for a request for environmental information to be refused if disclosure of the information would adversely affect:
(a)   the confidentiality of the proceedings of public authorities, where such confidentiality is provided for by law;
(b)   international relations, public security or national defence;
(c)   the course of justice, the ability of any person to receive a fair trial or the ability of a public authority to conduct an enquiry of a criminal or disciplinary nature;
(d)   the confidentiality of commercial or industrial information where such confidentiality is provided for by national or Community law to protect a legitimate economic interest, including the public interest in maintaining statistical confidentiality and tax secrecy;
(e)   intellectual property rights;
(f)   the confidentiality of personal data and/or files relating to a natural person where that person has not consented to the disclosure of the information to the public, where such confidentiality is provided for by national or Community law;
(g)   the interests or protection of any person who supplied the information requested on a voluntary basis without being under, or capable of being put under, a legal obligation to do so, unless that person has consented to the release of the information concerned;
(h)   the protection of the environment to which such information relates, such as the location of rare species.
The grounds for refusal mentioned in paragraphs 1 and 2 shall be interpreted in a restrictive way, taking into account for the particular case the public interest served by disclosure. In every particular case, the public interest served by

disclosure shall be weighed against the interest served by the refusal. Member States may not, by virtue of paragraph 2(a), (d), (f), (g) and (h), provide for a request to be refused where the request relates to information on emissions into the environment.

Within this framework, and for the purposes of the application of subparagraph (f), Member States shall ensure that the requirements of Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data are complied with(6).

3. Where a Member State provides for exceptions, it may draw up a publicly accessible list of criteria on the basis of which the authority concerned may decide how to handle requests.

4. Environmental information held by or for public authorities which has been requested by an applicant shall be made available in part where it is possible to separate out any information falling within the scope of paragraphs 1(d) and (e) or 2 from the rest of the information requested.

5. A refusal to make available all or part of the information requested shall be notified to the applicant in writing or electronically, if the request was in writing or if the applicant so requests, within the time limits referred to in Article 3(2)(a) or, as the case may be, (b). The notification shall state the reasons for the refusal and include information on the review procedure provided for in accordance with Article 6.

Article 5
Charges

1. Access to any public registers or lists established and maintained as mentioned in Article 3(5) and examination in situ of the information requested shall be free of charge.

2. Public authorities may make a charge for supplying any environmental information but such charge shall not exceed a reasonable amount.

3. Where charges are made, public authorities shall publish and make available to applicants a schedule of such charges as well as information on the circumstances in which a charge may be levied or waived.

Article 6
Access to justice

1. Member States shall ensure that any applicant who considers that his request for information has been ignored, wrongfully refused (whether in full or in part), inadequately answered or otherwise not dealt with in accordance with the provisions of Articles 3, 4 or 5, has access to a procedure in which the acts or omissions of the public authority concerned can be reconsidered by that or another public authority or reviewed administratively by an independent and impartial body established by law. Any such procedure shall be expeditious and either free of charge or inexpensive.

2. In addition to the review procedure referred to in paragraph 1, Member States shall ensure that an applicant has access to a review procedure before a court of law or another independent and impartial body established by law, in which the acts or omissions of the public authority concerned can be reviewed and whose decisions may become final. Member States may furthermore provide that third parties incriminated by the disclosure of information may also have access to legal recourse.

3. Final decisions under paragraph 2 shall be binding on the public authority holding the information. Reasons shall be stated in writing, at least where access to information is refused under this Article.

Article 7

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Dissemination of environmental information

1. Member States shall take the necessary measures to ensure that public authorities organise the environmental information which is relevant to their functions and which is held by or for them, with a view to its active and systematic dissemination to the public, in particular by means of computer telecommunication and/or electronic technology, where available.

The information made available by means of computer telecommunication and/or electronic technology need not include information collected before the entry into force of this Directive unless it is already available in electronic form.

Member States shall ensure that environmental information progressively becomes available in electronic databases which are easily accessible to the public through public telecommunication networks.

2. The information to be made available and disseminated shall be updated as appropriate and shall include at least:

(a)   texts of international treaties, conventions or agreements, and of Community, national, regional or local legislation, on the environment or relating to it;

(b)   policies, plans and programmes relating to the environment;

(c)   progress reports on the implementation of the items referred to in (a) and (b) when prepared or held in electronic form by public authorities;

(d)   the reports on the state of the environment referred to in paragraph 3;

(e)   data or summaries of data derived from the monitoring of activities affecting, or likely to affect, the environment;

(f)   authorisations with a significant impact on the environment and environmental agreements or a reference to the place where such information can be requested or found in the framework of Article 3;

(g)   environmental impact studies and risk assessments concerning the environmental elements referred to in Article 2(1)(a) or a reference to the place where the information can be requested or found in the framework of Article 3.

3. Without prejudice to any specific reporting obligations laid down by Community legislation, Member States shall take the necessary measures to ensure that national, and, where appropriate, regional or local reports on the state of the environment are published at regular intervals not exceeding four years; such reports shall include information on the quality of, and pressures on, the environment.

4. Without prejudice to any specific obligation laid down by Community legislation, Member States shall take the necessary measures to ensure that, in the event of an imminent threat to human health or the environment, whether caused by human activities or due to natural causes, all information held by or for public authorities which could enable the public likely to be affected to take measures to prevent or mitigate harm arising from the threat is disseminated, immediately and without delay.

5. The exceptions in Article 4(1) and (2) may apply in relation to the duties imposed by this Article.

6. Member States may satisfy the requirements of this Article by creating links to Internet sites where the information can be found.

Article 8
Quality of environmental information

1. Member States shall, so far as is within their power, ensure that any information that is compiled by them or on their behalf is up to date, accurate and comparable.

2. Upon request, public authorities shall reply to requests for information pursuant to Article 2(1)b, reporting to the applicant on the place where information, if available, can be found on the measurement procedures, including methods

of analysis, sampling, and pre-treatment of samples, used in compiling the information, or referring to a standardised procedure used.

Article 9
Review procedure

1. Not later than 14 February 2009, Member States shall report on the experience gained in the application of this Directive.
They shall communicate the report to the Commission not later than 14 August 2009.
No later than 14 February 2004, the Commission shall forward to the Member States a guidance document setting out clearly the manner in which it wishes the Member States to report.

2. In the light of experience and taking into account developments in computer telecommunication and/or electronic technology, the Commission shall make a report to the European Parliament and to the Council together with any proposal for revision, which it may consider appropriate.

Article 10
Implementation

Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive by 14 February 2005. They shall forthwith inform the Commission thereof.

When Member States adopt these measures, they shall contain a reference to this Directive or shall be accompanied by such reference on the occasion of their official publication. The methods of making such reference shall be laid down by Member States.

Article 11
Repeal

Directive 90/313/EEC is hereby repealed with effect from 14 February 2005.
References to the repealed Directive shall be construed as referring to this Directive and shall be read in accordance with the correlation table in the Annex.

Article 12
Entry into force

This Directive shall enter into force on the day of its publication in the Official Journal of the European Union.

Article 13
Addressees

This Directive is addressed to the Member States.
Done at Brussels, 28 January 2003.
For the European Parliament
The President
P. Cox
For the Council
The President
G. Papandreou

(1) OJ C 337 E, 28.11.2000, p. 156 and OJ C 240 E, 28.8.2001, p. 289.
(2) OJ C 116, 20.4.2001, p. 43.

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(3) OJ C 148, 18.5.2001, p. 9.
(4) Opinion of the European Parliament of 14 March 2001 (OJ C 343, 5.12.2001, p. 165), Council Common Position of 28 January 2002 (OJ C 113 E, 14.5.2002, p. 1) and Decision of the European Parliament of 30 May 2002 (not yet published in the Official Journal). Decision of the Council of 16 December 2002 and decision the European Parliament of 18 December 2002.
(5) OJ L 158, 23.6.1990, p. 56.
(6) OJ L 281, 23.11.1995, p. 31.

8. Directive 2007/2/EC of the European Parliament and the Council of 14 March 2007 establishing an Infrastructure for Spatial Information [2007] OJ L 108/1, 25 April 2007 ("the Inspire Directive")[1007]

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,
Having regard to the Treaty establishing the European Community, and in particular Article 175(1) thereof,

Having regard to the proposal from the Commission,

Having regard to the opinion of the European Economic and Social Committee (1),

After consulting the Committee of the Regions,

Acting in accordance with the procedure laid down in Article 251 of the Treaty, in the light of the joint text approved by the Conciliation Committee on 17 January 2007 (2),

Whereas:

(1)   Community policy on the environment must aim at a high level of protection taking into account the diversity of situations in the various regions of the Community. Moreover, information, including spatial information, is needed for the formulation and implementation of this policy and other Community policies, which must integrate environmental protection requirements in accordance with Article 6 of the Treaty. In order to bring about such integration, it is necessary to establish a measure of coordination between the users and providers of the information so that information and knowledge from different sectors can be combined.

(2)   The Sixth Environment Action Programme adopted by Decision No 1600/2002/EC of the European Parliament and of the Council of 22 July 2002 (3) requires full consideration to be given to ensuring that the Community's environmental policy-making is undertaken in an integrated way, taking into account regional and local differences. A number of problems exist regarding the availability, quality, organisation, accessibility and sharing of spatial information needed in order to achieve the objectives set out in that programme.

(3)   The problems regarding the availability, quality, organisation, accessibility and sharing of spatial information are common to a large number of policy and information themes and are experienced across the various levels of public authority. Solving these problems requires measures that address exchange, sharing, access and use of interoperable spatial data and spatial data services across the various levels of public authority and across different sectors. An infrastructure for spatial information in the Community should therefore be established.

(4)   The Infrastructure for Spatial Information in the European Community (Inspire) should assist policy-making in relation to policies and activities that may have a direct or indirect impact on the environment.

(5)   Inspire should be based on the infrastructures for spatial information that are created by the Member States and that are made compatible with common implementing rules and are supplemented with measures at Community level. These measures should ensure that the infrastructures for spatial information created by the Member States are compatible and usable in a Community and transboundary context.

[1007] European Parliament and Council of the European Union, Directive 2007/2/EC of the European Parliament and the Council of 14 March 2007 establishing an Infrastructure for Spatial Information [2007] OJ L 108/1, 25 April 2007, http://www.ec-gis.org/inspire/directive/l_10820070425en00010014.pdf   and   http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2007:108:0001:01:EN:HTML.

Open access policies, practices and licensing

(6)   The infrastructures for spatial information in the Member States should be designed to ensure that spatial data are stored, made available and maintained at the most appropriate level; that it is possible to combine spatial data from different sources across the Community in a consistent way and share them between several users and applications; that it is possible for spatial data collected at one level of public authority to be shared between other public authorities; that spatial data are made available under conditions which do not unduly restrict their extensive use; that it is easy to discover available spatial data, to evaluate their suitability for the purpose and to know the conditions applicable to their use.

(7)   There is a degree of overlap between the spatial information covered by this Directive and the information covered by Directive 2003/4/EC of the European Parliament and of the Council of 28 January 2003 on public access to environmental information (4). This Directive should be without prejudice to Directive 2003/4/EC.

(8)   This Directive should be without prejudice to Directive 2003/98/EC of the European Parliament and of the Council of 17 November 2003 on the re-use of public sector information (5), the objectives of which are complementary to those of this Directive.

(9)   This directive should not affect the existence or ownership of public authorities' intellectual property rights.

……

(12) This Directive should apply to spatial data held by or on behalf of public authorities and to the use of spatial data by public authorities in the performance of their public tasks. Subject to certain conditions, however, it should also apply to spatial data held by natural or legal persons other than public authorities, provided that those natural or legal persons request this.

(13) This Directive should not set requirements for the collection of new data, or for reporting such information to the Commission, since those matters are regulated by other legislation related to the environment.

(14) The implementation of the national infrastructures should be progressive and, accordingly, the spatial data themes covered by this Directive should be accorded different levels of priority. The implementation should take account of the extent to which spatial data are needed for a wide range of applications in various policy areas, of the priority of actions provided for under Community policies that need harmonised spatial data and of the progress already made by the harmonisation efforts undertaken in the Member States.

(15) The loss of time and resources in searching for existing spatial data or establishing whether they may be used for a particular purpose is a key obstacle to the full exploitation of the data available. Member States should therefore provide descriptions of available spatial data sets and services in the form of metadata.

(16) Since the wide diversity of formats and structures in which spatial data are organised and accessed in the Community hampers the efficient formulation, implementation, monitoring and evaluation of Community legislation that directly or indirectly affect the environment, implementing measures should be provided for in order to facilitate the use of spatial data from different sources across the Member States. Those measures should be designed to make the spatial data sets interoperable, and Member States should ensure that any data or information needed for the purposes of achieving interoperability are available on conditions that do not restrict their use for that purpose. Implementing rules should be based, where possible, on international standards and should not result in excessive costs for Member States.

……

(22) Public authorities need to have smooth access to relevant spatial data sets and services during the execution of their public tasks. Such access can be hindered if it depends on individual ad hoc negotiations between public authorities every time access is required. Member States should take the necessary measures to prevent such practical obstacles to the sharing of data, using for example prior agreements between public authorities.

(23) Where a public authority supplies another public authority in the same Member State with spatial data sets and services required for the fulfilment of reporting obligations under Community legislation relating to the environment, the Member State concerned should be free to decide that those spatial data sets and services shall not be subject to any charging. The mechanisms for sharing spatial data sets and services between government and other public administrations and natural or legal persons performing public administrative functions under national law should take into account the need to protect the financial viability of public authorities, in particular those that have a duty to raise

revenue. In any event, any charges applied should not exceed the cost of collection, production, reproduction and dissemination together with a reasonable return on investment.

……

(25) Frameworks for the sharing of spatial data between public authorities upon whom the Directive imposes a duty to share should be neutral in respect of such public authorities within a Member State, but also in respect of such public authorities in other Member States and of the Community institutions. Since the Community institutions and bodies frequently need to integrate and assess spatial information from all the Member States, they should be able to gain access to and use spatial data and spatial data services in accordance with harmonised conditions.

(26) With a view to stimulating the development of added-value services by third parties, for the benefit of both public authorities and the public, it is necessary to facilitate access to spatial data that extend over administrative or national borders.

……

(28) In order to benefit from the state of the art and actual experience of information infrastructures, it is appropriate that the measures necessary for the implementation of this Directive should be supported by international standards and standards adopted by European standardisation bodies in accordance with the procedure laid down in Directive 98/34/EC of the European Parliament and of the Council of 22 June 1998 laying down a procedure for the provision of information in the field of technical standards and regulations (10).

……

(31) The measures necessary for the implementation of this Directive should be adopted in accordance with Council Decision 1999/468/EC of 28 June 1999 laying down the procedures for the exercise of implementing powers conferred on the Commission (13).

(32) In particular, the Commission should be empowered to adapt the description of the existing data themes referred to in Annexes I, II and III. Since such measures are of general scope and are designed to amend non-essential elements of this Directive, they should be adopted in accordance with the regulatory procedure with scrutiny provided for in Article 5a of Decision 1999/468/EC.

(33) The Commission should also be empowered to adopt implementing rules laying down technical arrangements for the interoperability and harmonisation of spatial data sets and services, rules governing the conditions concerning access to such sets and services, as well as rules concerning the technical specifications and obligations of network services. Since such measures are of general scope and are designed to supplement this Directive by the addition of new non-essential elements, they should be adopted in accordance with the regulatory procedure with scrutiny provided for in Article 5a of Decision 1999/468/EC.

……

HAVE ADOPTED THIS DIRECTIVE:

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CHAPTER I
GENERAL PROVISIONS

</div>

Article 1

1. The purpose of this Directive is to lay down general rules aimed at the establishment of the Infrastructure for Spatial Information in the European Community (hereinafter referred to as Inspire), for the purposes of Community environmental policies and policies or activities which may have an impact on the environment.

2. Inspire shall build upon infrastructures for spatial information established and operated by the Member States.

Article 2

1. This Directive is without prejudice to Directives 2003/4/EC and 2003/98/EC.

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2. This Directive does not affect the existence or ownership of public authorities' intellectual property rights.

Article 3

For the purposes of this Directive, the following definitions shall apply:

1. 'infrastructure for spatial information' means metadata, spatial data sets and spatial data services; network services and technologies; agreements on sharing, access and use; and coordination and monitoring mechanisms, processes and procedures, established, operated or made available in accordance with this Directive;

2. 'spatial data' means any data with a direct or indirect reference to a specific location or geographical area;

3. 'spatial data set' means an identifiable collection of spatial data;

4. 'spatial data services' means the operations which may be performed, by invoking a computer application, on the spatial data contained in spatial data sets or on the related metadata;

5. 'spatial object' means an abstract representation of a realworld phenomenon related to a specific location or geographical area;

6. 'metadata' means information describing spatial data sets and spatial data services and making it possible to discover, inventory and use them;

7. 'interoperability' means the possibility for spatial data sets to be combined, and for services to interact, without repetitive manual intervention, in such a way that the result is coherent and the added value of the data sets and services is enhanced;

8. 'Inspire geo-portal' means an Internet site, or equivalent, providing access to the services referred to in Article 11(1);

9. 'public authority' means:
    (a)   any government or other public administration, including public advisory bodies, at national, regional or local level;
    (b)   any natural or legal person performing public administrative functions under national law, including specific duties, activities or services in relation to the environment; and
    (c)   any natural or legal person having public responsibilities or functions, or providing public services relating to the environment under the control of a body or person falling within (a) or (b).
    Member States may provide that when bodies or institutions are acting in a judicial or legislative capacity, they are not to be regarded as a public authority for the purposes of this Directive;

10. "third party" means any natural or legal person other than a public authority.

Article 4

1. This Directive shall cover spatial data sets which fulfil the following conditions:
(a)   they relate to an area where a Member State has and/or exercises jurisdictional rights;
(b)   they are in electronic format;
(c)   they are held by or on behalf of any of the following:
    (i)   a public authority, having been produced or received by a public authority, or being managed or updated by that authority and falling within the scope of its public tasks;
    (ii)   a third party to whom the network has been made available in accordance with Article 12;
(d)   they relate to one or more of the themes listed in Annex I, II or III.

2. In cases where multiple identical copies of the same spatial data set are held by or on behalf of various public authorities, this Directive shall apply only to the reference version from which the various copies are derived.

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3. This Directive shall also cover the spatial data services relating to the data contained in the spatial data sets referred to in paragraph 1.

4. This Directive does not require collection of new spatial data.

5. In the case of spatial data sets which comply with the condition set out in paragraph 1(c), but in respect of which a third party holds intellectual property rights, the public authority may take action under this Directive only with the consent of that third party.

6. By way of derogation from paragraph 1, this Directive shall cover spatial data sets held by or on behalf of a public authority operating at the lowest level of government within a Member State only if the Member State has laws or regulations requiring their collection or dissemination.

7. The description of the existing data themes referred to in Annexes I, II and III may be adapted in accordance with the regulatory procedure with scrutiny referred to in Article 22(3), in order to take into account the evolving needs for spatial data in support of Community policies that affect the environment.

CHAPTER II
METADATA

Article 5

1. Member States shall ensure that metadata are created for the spatial data sets and services corresponding to the themes listed in Annexes I, II and III, and that those metadata are kept up to date.
……

3. Member States shall take the necessary measures to ensure that metadata are complete and of a quality sufficient to fulfil the purpose set out in point (6) of Article 3.
……

Article 6

Member States shall create the metadata referred to in Article 5 in accordance with the following timetable:
(a)   not later than two years after the date of adoption of implementing rules in accordance with Article 5(4) in the case of the spatial data sets corresponding to the themes listed in Annexes I and II;
(b)   not later than five years after the date of adoption of implementing rules in accordance with Article 5(4) in the case of the spatial data sets corresponding to the themes listed in Annex III.

CHAPTER III
INTEROPERABILITY OF SPATIAL DATA SETS AND SERVICES

Article 7

1. Implementing rules laying down technical arrangements for the interoperability and, where practicable, harmonisation of spatial data sets and services, designed to amend non-essential elements of this Directive by supplementing it, shall be adopted in accordance with the regulatory procedure with scrutiny referred to in Article 22(3). Relevant user requirements, existing initiatives and international standards for the harmonisation of spatial data sets, as well as feasibility and cost-benefit considerations shall be taken into account in the development of the implementing rules. Where organisations established under international law have adopted relevant standards to ensure interoperability or harmonisation of spatial data sets and services, these standards shall be integrated, and the existing technical means shall be referred to, if appropriate, in the implementing rules mentioned in this paragraph.

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……

Article 11

1. Member States shall establish and operate a network of the following services for the spatial data sets and services for which metadata have been created in accordance with this Directive:

(a)   discovery services making it possible to search for spatial data sets and services on the basis of the content of the corresponding metadata and to display the content of the metadata;

(b)   view services making it possible, as a minimum, to display, navigate, zoom in/out, pan, or overlay viewable spatial data sets and to display legend information and any relevant content of metadata;

(c)   download services, enabling copies of spatial data sets, or parts of such sets, to be downloaded and, where practicable, accessed directly;

(d)   transformation services, enabling spatial data sets to be transformed with a view to achieving interoperability;

(e)   services allowing spatial data services to be invoked.

Those services shall take into account relevant user requirements and shall be easy to use, available to the public and accessible via the Internet or any other appropriate means of telecommunication.

……

Article 14

1. Member States shall ensure that the services referred to in points (a) and (b) of Article 11(1) are available to the public free of charge.

……

Article 15

1. The Commission shall establish and operate an Inspire geo-portal at Community level.

……

CHAPTER V
DATA-SHARING

Article 17

1. Each Member State shall adopt measures for the sharing of spatial data sets and services between its public authorities referred to in point (9)(a) and (b) of Article 3. Those measures shall enable those public authorities to gain access to spatial data sets and services, and to exchange and use those sets and services, for the purposes of public tasks that may have an impact on the environment.

2. The measures provided for in paragraph 1 shall preclude any restrictions likely to create practical obstacles, occurring at the point of use, to the sharing of spatial data sets and services.

3. Member States may allow public authorities that supply spatial data sets and services to license them to, and/or require payment from, the public authorities or institutions and bodies of the Community that use these spatial data sets and services. Any such charges and licenses must be fully compatible with the general aim of facilitating the sharing of spatial data sets and services between public authorities. Where charges are made, these shall be kept to the minimum required to ensure the necessary quality and supply of spatial data sets and services together with a reasonable return on investment, while respecting the self-financing requirements of public authorities supplying spatial data sets and services, where applicable. Spatial data sets and services provided by Member States to Community institutions and

bodies in order to fulfil their reporting obligations under Community legislation relating to the environment shall not be subject to any charging.

4. The arrangements for the sharing of spatial data sets and services provided for in paragraphs 1, 2 and 3 shall be open to public authorities referred to in point (9)(a) and (b) of Article 3 of other Member States and to the institutions and bodies of the Community, for the purposes of public tasks that may have an impact on the environment.

5. The arrangements for the sharing of spatial data sets and services provided for in paragraphs 1, 2 and 3 shall be open, on a reciprocal and equivalent basis, to bodies established by international agreements to which the Community and Member States are parties, for the purposes of tasks that may have an impact on the environment.

6. Where the arrangements for the sharing of spatial data sets and services provided for in paragraphs 1, 2 and 3 are made available in accordance with paragraphs 4 and 5, these arrangements may be accompanied by requirements under national law conditioning their use.

7. By way of derogation from this Article, Member States may limit sharing when this would compromise the course of justice, public security, national defence or international relations.

8. Member States shall provide the institutions and bodies of the Community with access to spatial data sets and services in accordance with harmonised conditions. Implementing rules governing those conditions, designed to amend non-essential elements of this Directive by supplementing it, shall be adopted in accordance with the regulatory procedure with scrutiny referred to in Article 22(3). These implementing rules shall fully respect the principles set out in paragraphs 1 to 3.

CHAPTER VI
COORDINATION AND COMPLEMENTARY MEASURES

Article 18

Member States shall ensure that appropriate structures and mechanisms are designated for coordinating, across the different levels of government, the contributions of all those with an interest in their infrastructures for spatial information.

These structures shall coordinate the contributions of, inter alia, users, producers, added-value service providers and coordinating bodies, concerning the identification of relevant data sets, user needs, the provision of information on existing practices and the provision of feedback on the implementation of this Directive.

Article 19

1. The Commission shall be responsible for coordinating Inspire at Community level and shall be assisted for that purpose by relevant organisations and, in particular, by the European Environment Agency.

2. Each Member State shall designate a contact point, usually a public authority, to be responsible for contacts with the Commission in relation to this Directive. This contact point will be supported by a coordination structure, taking account of the distribution of powers and responsibilities within the Member State.

Article 20

The implementing rules referred to in this Directive shall take due account of standards adopted by European standardisation bodies in accordance with the procedure laid down in Directive 98/34/EC, as well as international standards.

CHAPTER VII
FINAL PROVISIONS

Article 21

1. Member States shall monitor the implementation and use of their infrastructures for spatial information. They shall make the results of this monitoring accessible to the Commission and to the public on a permanent basis.

2. No later than 15 May 2010 Member States shall send to the Commission a report including summary descriptions of:
(a)   how public sector providers and users of spatial data sets and services and intermediary bodies are coordinated, and of the relationship with the third parties and of the organisation of quality assurance;
(b)   the contribution made by public authorities or third parties to the functioning and coordination of the infrastructure for spatial information;
(c)   information on the use of the infrastructure for spatial information;
(d)   data-sharing agreements between public authorities;
(e)   the costs and benefits of implementing this Directive.

3. Every three years, and starting no later than 15 May 2013, Member States shall send to the Commission a report providing updated information in relation to the items referred to in paragraph 2.

4. Detailed rules for the implementation of this Article shall be adopted in accordance with the regulatory procedure referred to in Article 22(2).
……

Article 23

By 15 May 2014 and every six years thereafter the Commission shall present to the European Parliament and to the Council a report on the implementation of this Directive based, inter alia, on reports from Member States in accordance with Article 21(2) and (3).
Where necessary, the report shall be accompanied by proposals for Community action.

Article 24

1. Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive by 15 May 2009. When Member States adopt these measures, they shall contain a reference to this Directive or shall be accompanied by such reference on the occasion of their official publication. The methods of making such reference shall be laid down by Member States.

2. Member States shall communicate to the Commission the text of the main provisions of national law which they adopt in the field covered by this Directive.
……

[1] OJ C 221, 8.9.2005, p. 33.
[2] Opinion of the European Parliament of 7 June 2005 (OJ C 124 E, 25.5.2006, p. 116), Council Common Position of 23 January 2006 (OJ C 126 E, 30.5.2006, p. 16) and Position of the European Parliament of 13 June 2006 (not yet published in the Official Journal). Decision of the Council of 29 January 2007 and legislative resolution of the European Parliament of 13 February 2007 (not yet published in the Official Journal).
[3] OJ L 242, 10.9.2002, p. 1.
[4] OJ L 41, 14.2.2003, p. 26.
[5] OJ L 345, 31.12.2003, p. 90.
……
[10] OJ L 204, 21.7.1998, p. 37. Directive as last amended by the 2003 Act of Accession.
……

[13] OJ L 184, 17.7.1999, p. 23. Decision as amended by Decision 2006/512/EC (OJ L 200, 22.7.2006, p. 11).

ANNEX I

SPATIAL DATA THEMES REFERRED TO IN ARTICLES 6(A), 8(1) AND 9(A)

1. Coordinate reference systems

Systems for uniquely referencing spatial information in space as a set of coordinates (x, y, z) and/or latitude and longitude and height, based on a geodetic horizontal and vertical datum.

2. Geographical grid systems

Harmonised multi-resolution grid with a common point of origin and standardised location and size of grid cells.

3. Geographical names

Names of areas, regions, localities, cities, suburbs, towns or settlements, or any geographical or topographical feature of public or historical interest.

4. Administrative units

Units of administration, dividing areas where Member States have and/or exercise jurisdictional rights, for local, regional and national governance, separated by administrative boundaries.

5. Addresses

Location of properties based on address identifiers, usually by road name, house number, postal code.

6. Cadastral parcels

Areas defined by cadastral registers or equivalent.

7. Transport networks

Road, rail, air and water transport networks and related infrastructure. Includes links between different networks. Also includes the trans-European transport network as defined in Decision No 1692/96/EC of the European Parliament and of the Council of 23 July 1996 on Community Guidelines for the development of the trans-European transport network [1] and future revisions of that Decision.

8. Hydrography

Hydrographic elements, including marine areas and all other water bodies and items related to them, including river basins and sub-basins. Where appropriate, according to the definitions set out in Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy [2] and in the form of networks.

9. Protected sites

Area designated or managed within a framework of international, Community and Member States' legislation to achieve specific conservation objectives.

[1] OJ L 228, 9.9.1996, p. 1. Decision as last amended by Council Regulation (EC) No 1791/2006 (OJ L 363, 20.12.2006, p. 1).
[2] OJ L 327, 22.12.2000, p. 1. Directive as amended by Decision No 2455/2001/EC (OJ L 331, 15.12.2001, p. 1).

ANNEX II
SPATIAL DATA THEMES REFERRED TO IN ARTICLES 6(A), 8(1) AND 9(B)

1. Elevation

Digital elevation models for land, ice and ocean surface. Includes terrestrial elevation, bathymetry and shoreline.

2. Land cover

Physical and biological cover of the earth's surface including artificial surfaces, agricultural areas, forests, (semi-)natural areas, wetlands, water bodies.

3. Orthoimagery

Geo-referenced image data of the Earth's surface, from either satellite or airborne sensors.

4. Geology

Geology characterised according to composition and structure. Includes bedrock, aquifers and geomorphology.

ANNEX III
SPATIAL DATA THEMES REFERRED TO IN ARTICLES 6(B) AND 9(B)

1. Statistical units

Units for dissemination or use of statistical information.

2. Buildings

Geographical location of buildings.

3. Soil

Soils and subsoil characterised according to depth, texture, structure and content of particles and organic material, stoniness, erosion, where appropriate mean slope and anticipated water storage capacity.

4. Land use

Territory characterised according to its current and future planned functional dimension or socio-economic purpose (e.g. residential, industrial, commercial, agricultural, forestry, recreational).

5. Human health and safety

Geographical distribution of dominance of pathologies (allergies, cancers, respiratory diseases, etc.), information indicating the effect on health (biomarkers, decline of fertility, epidemics) or well-being of humans (fatigue, stress, etc.) linked directly (air pollution, chemicals, depletion of the ozone layer, noise, etc.) or indirectly (food, genetically modified organisms, etc.) to the quality of the environment.

6. Utility and governmental services

Includes utility facilities such as sewage, waste management, energy supply and water supply, administrative and social governmental services such as public administrations, civil protection sites, schools and hospitals.

7. Environmental monitoring facilities

Location and operation of environmental monitoring facilities includes observation and measurement of emissions, of the state of environmental media and of other ecosystem parameters (biodiversity, ecological conditions of vegetation, etc.) by or on behalf of public authorities.

8. Production and industrial facilities

Industrial production sites, including installations covered by Council Directive 96/61/EC of 24 September 1996 concerning integrated pollution prevention and control [1] and water abstraction facilities, mining, storage sites.

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9. Agricultural and aquaculture facilities

Farming equipment and production facilities (including irrigation systems, greenhouses and stables).

10. Population distribution — demography

Geographical distribution of people, including population characteristics and activity levels, aggregated by grid, region, administrative unit or other analytical unit.

11. Area management/restriction/regulation zones and reporting units

Areas managed, regulated or used for reporting at international, European, national, regional and local levels. Includes dumping sites, restricted areas around drinking water sources, nitrate-vulnerable zones, regulated fairways at sea or large inland waters, areas for the dumping of waste, noise restriction zones, prospecting and mining permit areas, river basin districts, relevant reporting units and coastal zone management areas.

12. Natural risk zones

Vulnerable areas characterised according to natural hazards (all atmospheric, hydrologic, seismic, volcanic and wildfire phenomena that, because of their location, severity, and frequency, have the potential to seriously affect society), e.g. floods, landslides and subsidence, avalanches, forest fires, earthquakes, volcanic eruptions.

13. Atmospheric conditions

Physical conditions in the atmosphere. Includes spatial data based on measurements, on models or on a combination thereof and includes measurement locations.

14. Meteorological geographical features

Weather conditions and their measurements; precipitation, temperature, evapotranspiration, wind speed and direction.

15. Oceanographic geographical features

Physical conditions of oceans (currents, salinity, wave heights, etc.).

16. Sea regions

Physical conditions of seas and saline water bodies divided into regions and sub-regions with common characteristics.

17. Bio-geographical regions

Areas of relatively homogeneous ecological conditions with common characteristics.

18. Habitats and biotopes

Geographical areas characterised by specific ecological conditions, processes, structure, and (life support) functions that physically support the organisms that live there. Includes terrestrial and aquatic areas distinguished by geographical, abiotic and biotic features, whether entirely natural or semi-natural.

19. Species distribution

Geographical distribution of occurrence of animal and plant species aggregated by grid, region, administrative unit or other analytical unit.

20. Energy resources

Energy resources including hydrocarbons, hydropower, bio-energy, solar, wind, etc., where relevant including depth/height information on the extent of the resource.

21. Mineral resources

Mineral resources including metal ores, industrial minerals, etc., where relevant including depth/height information on the extent of the resource.

[1] OJ L 257, 10.10.1996, p. 26. Directive as last amended by Regulation (EC) No 166/2006 of the European Parliament and of the Council (OJ L 33, 4.2.2006, p. 1).

9. Rio Declaration on Environment and Development, United Nations (1992)[1008]

The United Nations Conference on Environment and Development,

Having met at Rio de Janeiro from 3 to 14 June 1992,

Reaffirming the Declaration of the United Nations Conference on the Human Environment, adopted at Stockholm on 16 June 1972, and seeking to build upon it,

With the goal of establishing a new and equitable global partnership through the creation of new levels of cooperation among States, key sectors of societies and people,

Working towards international agreements which respect the interests of all and protect the integrity of the global environmental and developmental system,

Recognizing the integral and interdependent nature of the Earth, our home,

Proclaims that:
……

Principle 9

States should cooperate to strengthen endogenous capacity-building for sustainable development by

improving scientific understanding through exchanges of scientific and technological knowledge, and by enhancing the development, adaptation, diffusion and transfer of technologies, including new and innovative technologies.

Principle 10

Environmental issues are best handled with participation of all concerned citizens, at the relevant level. At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities

in their communities, and the opportunity to participate in decision-making processes. States shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided.

……

[1008] United Nations, *Rio Declaration on Environment and Development*, United Nations Conference on Environment and Development, Rio de Janeiro (1992), available at http://www.unep.org/Documents.Multilingual/Default.asp?DocumentID=78&ArticleID=1163 accessed 5 June 2009.

10. Aarhus Convention on Access to Information, Public Participation in Decision Making, and Access to Justice in Environmental Matters, United Nations Economic Commission for Europe (UNECE) (1998)[1009]

The Parties to this Convention,

Recalling principle l of the Stockholm Declaration on the Human Environment,

Recalling also principle 10 of the Rio Declaration on Environment and Development,

Recalling further General Assembly resolutions 37/7 of 28 October 1982 on the World Charter for Nature and 45/94 of 14 December 1990 on the need to ensure a healthy environment for the well-being of individuals,

Recalling the European Charter on Environment and Health adopted at the First European Conference on Environment and Health of the World Health Organization in Frankfurt-am-Main, Germany, on 8 December 1989,

Affirming the need to protect, preserve and improve the state of the environment and to ensure sustainable and environmentally sound development,

Recognizing that adequate protection of the environment is essential to human well-being and the enjoyment of basic human rights, including the right to life itself,

Recognizing also that every person has the right to live in an environment adequate to his or her health and well-being, and the duty, both individually and in association with others, to protect and improve the environment for the benefit of present and future generations,

Considering that, to be able to assert this right and observe this duty, citizens must have access to information, be entitled to participate in decision-making and have access to justice in environmental matters, and acknowledging in this regard that citizens may need assistance in order to exercise their rights,

Recognizing that, in the field of the environment, improved access to information and public participation in decision-making enhance the quality and the implementation of decisions, contribute to public awareness of environmental issues, give the public the opportunity to express its concerns and enable public authorities to take due account of such concerns,

Aiming thereby to further the accountability of and transparency in decision-making and to strengthen public support for decisions on the environment,

Have agreed as follows:

Article 1

OBJECTIVE

In order to contribute to the protection of the right of every person of present and future generations to live in an environment adequate to his or her health and well-being, each Party shall guarantee the rights of access to information, public participation in decision-making, and access to justice in environmental matters in accordance with the provisions of this Convention.

Article 2

[1009] United Nations Economic Commission for Europe, *Aarhus Convention on Access to Information, Public Participation in Decision Making and Access to Justice in Environmental Matters*, Aarhus (1998) available at http://www.unece.org/env/pp/treatytext.htm.

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DEFINITIONS

For the purposes of this Convention,

……

2. "Public authority" means:

    (a)   Government at national, regional and other level;

    (b)   Natural or legal persons performing public administrative functions under national law, including specific duties, activities or services in relation to the environment;

    (c)   Any other natural or legal persons having public responsibilities or functions, or providing public services, in relation to the environment, under the control of a body or person falling within subparagraphs (a) or (b) above;

    (d)   The institutions of any regional economic integration organization referred to in article 17 which is a Party to this Convention.

This definition does not include bodies or institutions acting in a judicial or legislative capacity;

3. "Environmental information" means any information in written, visual, aural, electronic or any other material form on:

    (a)   The state of elements of the environment, such as air and atmosphere, water, soil, land, landscape and natural sites, biological diversity and its components, including genetically modified organisms, and the interaction among these elements;

    (b)   Factors, such as substances, energy, noise and radiation, and activities or measures, including administrative measures, environmental agreements, policies, legislation, plans and programmes, affecting or likely to affect the elements of the environment within the scope of subparagraph (a) above, and cost-benefit and other economic analyses and assumptions used in environmental decision-making;

    (c)   The state of human health and safety, conditions of human life, cultural sites and built structures, inasmuch as they are or may be affected by the state of the elements of the environment or, through these elements, by the factors, activities or measures referred to in subparagraph (b) above;

……

Article 5

COLLECTION AND DISSEMINATION OF ENVIRONMENTAL INFORMATION

1. Each Party shall ensure that:

(a)   Public authorities possess and update environmental information which is relevant to their functions;

(b)   Mandatory systems are established so that there is an adequate flow of information to public authorities about proposed and existing activities which may significantly affect the environment;

(c)   In the event of any imminent threat to human health or the environment, whether caused by human activities or due to natural causes, all information which could enable the public to take measures to prevent or mitigate harm arising from the threat and is held by a public authority is disseminated immediately and without delay to members of the public who may be affected.

2. Each Party shall ensure that, within the framework of national legislation, the way in which public authorities make environmental information available to the public is transparent and that environmental information is effectively

accessible, inter alia, by:

(a)   Providing sufficient information to the public about the type and scope of environmental information held by the relevant public authorities, the basic terms and conditions under which such information is made available and accessible, and the process by which it can be obtained;

(b)   Establishing and maintaining practical arrangements, such as:

    (i)   Publicly accessible lists, registers or files;

    (ii)   Requiring officials to support the public in seeking access to information under this Convention; and

    (iii)   The identification of points of contact; and

(c)   Providing access to the environmental information contained in lists, registers or files as referred to in subparagraph (b) (i) above free of charge.

3. Each Party shall ensure that environmental information progressively becomes available in electronic databases which are easily accessible to the public through public telecommunications networks. Information accessible in this form should include:

(a)   Reports on the state of the environment, as referred to in paragraph 4 below;

(b)   Texts of legislation on or relating to the environment;

(c)   As appropriate, policies, plans and programmes on or relating to the environment, and environmental agreements; and

(d)   Other information, to the extent that the availability of such information in this form would facilitate the application of national law implementing this Convention, provided that such information is already available in electronic form.

4. Each Party shall, at regular intervals not exceeding three or four years, publish and disseminate a national report on the state of the environment, including information on the quality of the environment and information on pressures on the environment.

5. Each Party shall take measures within the framework of its legislation for the purpose of disseminating, inter alia:

(a)   Legislation and policy documents such as documents on strategies, policies, programmes and action plans relating to the environment, and progress reports on their implementation, prepared at various levels of government;

(b)   International treaties, conventions and agreements on environmental issues; and

(c)   Other significant international documents on environmental issues, as appropriate.

6. Each Party shall encourage operators whose activities have a significant impact on the environment to inform the public regularly of the environmental impact of their activities and products, where appropriate within the framework of voluntary eco-labelling or eco-auditing schemes or by other means.

7. Each Party shall:

(a)   Publish the facts and analyses of facts which it considers relevant and important in framing major environmental policy proposals;

(b)   Publish, or otherwise make accessible, available explanatory material on its dealings with the public in matters falling within the scope of this Convention; and

(c)   Provide in an appropriate form information on the performance of public functions or the provision of public

services relating to the environment by government at all levels.

8. Each Party shall develop mechanisms with a view to ensuring that sufficient product information is made available to the public in a manner which enables consumers to make informed environmental choices.

9. Each Party shall take steps to establish progressively, taking into account international processes where appropriate, a coherent, nationwide system of pollution inventories or registers on a structured, computerized and publicly accessible database compiled through standardized reporting. Such a system may include inputs, releases and transfers of a specified range of substances and products, including water, energy and resource use, from a specified range of activities to environmental media and to on-site and offsite treatment and disposal sites.

10. Nothing in this article may prejudice the right of Parties to refuse to disclose certain environmental information in accordance with article 4, paragraphs 3 and 4.

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Article 9

ACCESS TO JUSTICE

1. Each Party shall, within the framework of its national legislation, ensure that any person who considers that his or her request for information under article 4 has been ignored, wrongfully refused, whether in part or in full, inadequately answered, or otherwise not dealt with in accordance with the provisions of that article, has access to a review procedure before a court of law or another independent and impartial body established by law.

In the circumstances where a Party provides for such a review by a court of law, it shall ensure that such a person also has access to an expeditious procedure established by law that is free of charge or inexpensive for reconsideration by a public authority or review by an independent and impartial body other than a court of law.

Final decisions under this paragraph 1 shall be binding on the public authority holding the information. Reasons shall be stated in writing, at least where access to information is refused under this paragraph.

2. Each Party shall, within the framework of its national legislation, ensure that members of the public concerned

(a)   Having a sufficient interest or, alternatively,

(b)   Maintaining impairment of a right, where the administrative procedural law of a Party requires this as a precondition, have access to a review procedure before a court of law and/or another independent and impartial body established by law, to challenge the substantive and procedural legality of any decision, act or omission subject to the provisions of article 6 and, where so provided for under national law and without prejudice to paragraph 3 below, of other relevant provisions of this Convention.

What constitutes a sufficient interest and impairment of a right shall be determined in accordance with the requirements of national law and consistently with the objective of giving the public concerned wide access to justice within the scope of this Convention. To this end, the interest of any non-governmental organization meeting the requirements referred to in article 2, paragraph 5, shall be deemed sufficient for the purpose of subparagraph (a) above. Such organizations shall also be deemed to have rights capable of being impaired for the purpose of subparagraph (b) above.

The provisions of this paragraph 2 shall not exclude the possibility of a preliminary review procedure before an administrative authority and shall not affect the requirement of exhaustion of administrative review procedures prior to recourse to judicial review procedures, where such a requirement exists under national law.

3. In addition and without prejudice to the review procedures referred to in paragraphs 1 and 2 above, each Party shall ensure that, where they meet the criteria, if any, laid down in its national law, members of the public have access to administrative or judicial procedures to challenge acts and omissions by private persons and public authorities which contravene provisions of its national law relating to the environment.

4. In addition and without prejudice to paragraph 1 above, the procedures referred to in paragraphs 1, 2 and 3 above shall provide adequate and effective remedies, including injunctive relief as appropriate, and be fair, equitable, timely

and not prohibitively expensive. Decisions under this article shall be given or recorded in writing. Decisions of courts, and whenever possible of other bodies, shall be publicly accessible.

5. In order to further the effectiveness of the provisions of this article, each Party shall ensure that information is provided to the public on access to administrative and judicial review procedures and shall consider the establishment of appropriate assistance mechanisms to remove or reduce financial and other barriers to access to justice.

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11. GEOSS Data Sharing Principles (2005)[1010]

5.4 Data Sharing
The societal benefits of Earth observations cannot be achieved without data sharing.

The following are GEOSS data sharing principles:

4. There will be full and open exchange of data, metadata and products shared within GEOSS, recognising relevant international instruments, and national policies and legislation.

5. All shared data, metadata and products will be made available with minimum time delay and at minimum cost.

6. All shared data, metadata and products being free of charge or at no more than the cost of reproduction will be encouraged for research and education.

12. The Antarctic Treaty (1959) [1011]

Article III

1. In order to promote international cooperation in scientific investigation in Antarctica, as provided for in Article II of the present Treaty, the Contracting Parties agree that, to the greatest extent feasible and practicable:

(a) information regarding plans for scientific programs in Antarctica shall be exchanged to permit maximum economy and efficiency of operations;

(b) scientific personnel shall be exchanged in Antarctica between expeditions and stations;

(c) scientific observations and results from Antarctica shall be exchanged and made freely available.

2. In implementing this Article, every encouragement shall be given to the establishment of cooperative working relations with those Specialized Agencies of the United Nations and other international organizations having a scientific or technical interest in Antarctica.

[1010] Contained in the The Global Earth Observation System of Systems (GEOSS) *10 Year Implementation Plan* (adopted 16 February 2005), p 4, available at http://www.earthobservations.org/docs/10-Year%20Implementation%20Plan.pdf accessed 5 June 2009.
[1011] Signed Washington, 1 December 1959; entry into force for Australia and generally: 23 June 1961
[1961] ATS 12 (Australian Treaty Series, 1961 No. 12) available at http://www.austlii.edu.au/cgi-bin/sinodisp/au/other/dfat/treaties/1961/12.html?query=antarctic accessed 5 June 2009.

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GeoConnections Canada: http://www.geoconnections.org.

GeoGratis: http://www.geogratis.ca/geogratis/en/index.html.

Abbreviations and Acronyms

Australia and New Zealand

ABS	Australian Bureau of Statistics
AG	Attorney General
AGIMO	Australian Government Information Management Office
ALGA	Australian Local Government Association
ALIC	Australia Land Information Council
ALRC	Australian Law Reform Commission
AMD	Antarctic Master Directory
ANZLIC	Formerly an acronym for Australia New Zealand Land Information Council, now the council is called ANZLIC – the spatial information council
ARC	Australian Research Council
ASC	Australian Spatial Consortium
ASDD	Australian Spatial Data Directory
ASDI	Australian Spatial Data Infrastructure
ASIBA	Australian Spatial Information Business Association
AUSLIG	Australian Survey and Land Information Group
CC	Creative Commons
CIOC	Chief Information Officers' Committee
CJCIOC	Cross-Jurisdictional Chief Information Officers Committee
CLIF	Commonwealth Land Information Forum
CLRC	Copyright Law Review Committee
CODATA	Committee on Data for Science and Technology
CRC-SI	Cooperative Research Centre for Spatial Information
CSDC	Commonwealth Spatial Data Committee
CSDMG	Commonwealth Spatial Data Management Group
CSDPE	Commonwealth Spatial Data Policy Executive
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DBCDE	Department of Broadband, Communications and the Digital Economy
DCITA	Department of Communications, Information Technology and the Arts
DEST	Department of Education Science and Training
DIST	Department of Industry Science and Technology
DISR	Department of Industry, Science and Resources
DNRW	Department of Natural Resources and Water
EDIC	Economic Development and Infrastructure Committee
EMC	Executive Management Committee
FoI	Freedom of Information
GDP	Gross Domestic Product
GILF	Government Information Licensing Framework
GIS	Geographic Information System
ICT	Information Communication Technology

IDC	Interdepartmental Committee (specifically: Commonwealth Interdepartmental Committee on Spatial Data Access and Pricing)
IMSC	Information Management Steering Committee
IP	Intellectual Property
IPR	Intellectual Property Rights
IPY	International Polar Year
JCADM	Joint Committee on Antarctic Data Management
NADC	National Antarctic Data Centres
NCRIS	National Collaborative Research Infrastructure Strategy
NHMRC	National Health and Medical Research Council
NIH	National Institutes of Health
NISC	National Information Services Council
NISS	National Information Sharing Strategy
NSW	New South Wales
NZ	New Zealand
OAK	Open Access to Knowledge
OCC	Online and Communications Council
OECD	Organisation for Economic Co-operation and Development
OESR	Office of Economic and Statistical Research
OIA	Official Information Act
OSDM	Office of Spatial Data Management
PFGHI	Policy for Government Held Information
PhD	Doctor of Philosophy degree
PMSEIC	Prime Minister's Science, Engineering and Innovation Council
PSD	Public Sector Data
PSI	Public Sector Information
PSMA	Public Sector Mapping Agencies
QSIC	Queensland Spatial Information Council
QUT	Queensland University of Technology
R&D	Research and Development
SC-AGI	SCAR Standing Committee on Antarctic Geographic Information
SCAR	Scientific Committee for Antarctic Research
SDI	Spatial Data Infrastructure
SDMG	Spatial Data Management Group
SSI	Spatial Sciences Institute
SUP	Sydney University Press
SWG	Schedule Working Group
UNSW	University of New South Wales
US	United States (of America)
WILF	Water Information Licensing Framework
WIRADA	Water Information Research and Development Alliance

International

CAS	CGIAR Central Advisory Service
CGIAR	Consultative Group on International Agricultural Research
CIMMYT	International Maize and Wheat Improvement Centre
CODATA	Committee on Data for Science and Technology
COSPAR	Committee on Space Research
CSI	CGIAR Consortium for Spatial Information
DEST	Department of Education, Science and Training
EU	European Union
FGDC	Federal Government Data Committee
GEO	Group on Earth Observations
GEOSS	Global Earth Observation System of Systems
GSDI	Global Spatial Data Infrastructure
ICSU	International Council for Science
ICTs	Information Communication Technologies
IGBP	International Geosphere-Biosphere Program
IGF	Internet Governance Forum
IGF3	Third IGF meeting held in Hyderabad, India in December 2008
IOC	International Oceanographic Commission of UNESCO
IODE	International Oceanographic Data and Information Exchange
IPRs	Intellectual Property Rights
ISPRS	International Society for Photogrammetry and Remote Sensing
ITU	International Telecommunication Union
NII	US National Information Infrastructure
NSDI	National Spatial Data Infrastructure
OAK	Open Access to Knowledge
OECD	Organisation for Economic Cooperation and Development
OER	Open Educational Resource
OGC	Open Geospatial Consortium
OMB	US Office of Management and Budget
OSI (UK)	Office of Science and Innovation (United Kingdom)
PMSEIC	Prime Minister's Science, Engineering and Innovation Council
PSI	Public Sector Information
SCAR	Scientific Committee on Antarctic Research
SCOR	Scientific Committee on Oceanic Research
SCOSTEP	Scientific Committee on Solar-Terrestrial Physics
SDI	Spatial Data Infrastructure
UK	United Kingdom
UN	United Nations
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environment Program
UNESCO	United Nations Educational, Scientific and Cultural Organisation
US	United States
WCRP	World Climate Research Program
WDC	World Data Centre
WMO	World Meteorological Organization

WPIE	Working Party on the Information Economy
WSIS	World Summit on the Information Society
WSSD	World Summit for Sustainable Development

Europe

CERN	European Organisation for Nuclear Research
DG	Directorate General
EC	European Commission
EEA	European Environment Agency
EGEE	Enabling Grids for E-sciencE
ERC	European Research Council
ERA	European Research Area
EU	European Union
FP7	Seventh Framework Programme
INSPIRE	Infrastructure for Spatial Information in Europe
INSPIRE Directive	Directive Directive 2007/2/EC of the European Parliament and the Council of 14 March 2007 establishing an Infrastructure for Spatial Information
JRC	(EC) Joint Research Centre
LAB	Legal Advisory Board
LDC	Large Hadron Collider
MEPSIR	Measuring European Public Sector Information Resources
MICUS report	MICUS (Martin Fornefeld, Gaby Boele-Keimer, Stephan Recher and Michael Fanning), Assessment of the Re-use of Public Sector Information (PSI) in the Geographical information, Meteorological Information and Legal Information Sectors (Final Report), 2 December 2008.
MODEG	Marine Observation and Data Expert Group
OPSI	Office of Public Sector Information
PSI	Public Sector Information
PIRA Report	PIRA International (2000) Commercial exploitation of Europe's public sector information: Final Report for the European Commission Directorate General for the Information Society, Commission of the European Communities, 30 October 2000.
SEIS	Shared Environmental Information System
WLCG	Worldwide LHC Computing Grid

United Kingdom

APPSI	Advisory Panel on Public Sector Information
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CIE	UK Common Information Environment project
CUPI	Commercial Use of Public Information
EPSRC	Engineering and Physical Sciences Research Council
HMSO	Her Majesty's Stationery Office
OFT	Office of Fair Trading
OPSI	UK Office of Public Sector Information
PSI	Public Sector Information
PSIHs	public sector information holders
RCUK	Research Councils UK

United States

CCIA	Computer and Communications Industry Association
CENDI	Commerce, Energy, NASA, Defense Information Managers Group
COFUR	cost of fulfilling user requests
DC	District of Columbia
DG	Directorate General
EOSDIS	Earth Observing System Data and Information System
EU	European Union
FGDC	Federal Geographic Data Committee
GINIE	Geographic Information Network in Europe
GIS	Geographic Information Systems
GSDI	Global Spatial Data Infrastructure
IWGDD	Interagency Working Group on Digital Data
MAF	Master Address File
NAPA	National Academy of Public Administration
NASA	National Aeronautics and Space Administration
NGAC	National Geospatial Advisory Committee
NGPO	National Geospatial Programs Office
NIH	National Institutes of Health
NII	National Information Infrastructure
NIST	National Institute for Standards and Technology
NOAA	National Oceanic and Atmospheric Administration
NRC	National Research Council
NSDI	National Spatial Data Infrastructure
NSGIC	National States Geographic Information Council
NSTC	National Science and Technology Council
OECD	Organization for Economic Co-operation and Development
OMB	Office of Management and Budget
OSDM	Office of Spatial Data Management
PRA	Paperwork Reduction Act
SDI	Spatial Data Infrastructure
SSDI	Statewide Spatial Data Infrastructure
STIA	Spatial Technologies Industry Association
TIGER	Topologically Integrated Geographic Encoding and Referencing
UK	United Kingdom

UM	University of Mississippi
US	United States (of America)
USGS	U.S. Geological Survey
WMO	World Meteorological Organization
ZCTA	ZIP Code Tabulation Area

Canada

CCOG	Canadian Council on Geomatics
CGDI	Canadian Geospatial Data Infrastructure
DLGWG	Data Licensing Guide Working Group
ESS	Earth Sciences Sector
FGDC	(United States) Federal Geographic Data Committee
GIAC	Geomatics Industry Association of Canada
GIS	Geographic Information Systems
NRCan	Natural Resources Canada
SDI	Spatial Data Infrastructure