CHAPTER FOUR

OPEN ACCESS AND PUBLIC SECTOR INFORMATION: POLICY DEVELOPMENTS IN AUSTRALIA AND KEY JURISDICTIONS

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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[1] 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 re-use 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 re-use rights.

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[1] 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
www.osdm.gov.au/OSDM/Policies+and+Guidelines/Spatial+Data+Access+and+Pricing/default.aspx. accessed 14 September 2008.

The value of PSI increases when restrictions on access and re-use are removed and it is made available in common digital formats downloadable from internet websites.[2] 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 email 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, simulation and virtual worlds – have brought about a revolution.[3] 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 re-used, they need to develop an integrated and comprehensive information policy framework that supports access and re-use among a distributed, online network of information suppliers and users. An extensive review of the materials published in Australia and key overseas jurisdictions[4] 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

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[2] 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: 160, *Yale Journal of Law and Technology,* available at 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 poit.cabinetoffice.gov.uk/poit/wp-content/uploads/2009/03/poit-report-final-doc.doc.

[3] 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 the 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 www.dbcde.gov.au/digital_economy/digital_economy_consultation/submissions. (under 'Queensland University of Technology QUT Law Faculty) at 10 June 2009.

[4] The review of the literature covered Australia (federal, State and Territory levels), New Zealand, the United States, the European Union (with a particular focus on the United Kingdom), Canada, international organisations and inter-governmental organisations. 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, such as 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 web, e.g. blogs. This research was carried out from 2007 to 2009 by a team of researchers from the QUT Faculty of Law and the Queensland Government, led by Professor Anne Fitzgerald (QUT). A report , *A review of the literature on the legal aspects of open access policy, practices and licensing in Australia and selected jurisdictions*, (June 2009) is available at: Compiled Literature Review (via Queensland University of Technology (QUT) ePrints) - www.aupsi.org/publications/reports.jsp. The report has been produced as part of the Apollo project within the work program of project 3.05, 'Enabling Real-Time Information Access in Both Urban and Regional Areas', established within the Cooperative Research Centre for Spatial Information (CRCSI).

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[5] 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.[6] 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 Co-operation and Development (OECD), and the International Science Union's Committee on Data for Science and Technology (CODATA).

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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. Some important practices and initiatives can be identified but they are only loosely connected, deal with different aspects of access and re-use and lack any formal coordination.

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[7] and acknowledged in ministerial addresses in 2008 and 2009. The *Venturous Australia – Building Strength in Innovation* report produced by the NIS review panel[8] recommended that a National Information Strategy should be established, to optimise the flow of information in the Australian economy.[9] It further recommended that, 'to

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

[6] 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 powerofinformation.wordpress.com/).

[7] 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 www.innovation.gov.au/innovationreview/Pages/home.aspx.

[8] 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 www.innovation.gov.au/innovationreview/Pages/home.aspx. accessed 11 June 2009.

[9] ibid. In Recommendation 7.7 which states:

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',[10] that 'Australian governments should adopt international standards of open publishing as far as possible'[11] and that PSI 'should be released under a creative commons licence'.[12] 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'[13] 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'.[14] 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'.[15] 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.[16]

The federal government's response to the Venturous Australia recommendations, contained in the White Paper, *Powering Ideas: An Innovation Agenda for the 21st Century,*[17] released as part of the May 2009 Budget process, is generally supportive of its recommendations on access to PSI. It

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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).

[10] 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'.

[11] Recommendation 7.8.

[12] Recommendation 7.8.

[13] See Australian Government, Department of Broadband, Communications and the Digital Economy, *Digital Economy Future Directions: Consultation Paper* (18 December 2008) www.dbcde.gov.au/communications_for_business/Digital_Economy_Development/digital_economy_con sultation. accessed 22 May 2009.

[14] ibid., p. 3. Responses received by government during this consultation process informed the government's 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 the 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 www.dbcde.gov.au/digital_economy/digital_economy_consultation/submissions. (under 'Queensland University of Technology QUT Law Faculty) at 10 June 2009.

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

[16] ibid. p. 11.

[17] *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 www.innovation.gov.au/innovationreview/Documents/PoweringIdeas_fullreport.pdf, accessed 14 July 2009.

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'.[18] 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.[19] 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,[20] develop a whole-of-government information management framework (IMF),[21] adopt Creative Commons licensing as the default licensing system for the IMF[22] and develop specific guidelines for the pricing of PSI, emphasising no or marginal cost provision wherever possible.[23]

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[24] 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'.[25] To advance work in these areas, in June 2009, the federal government appointed

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[18] ibid. p. 57.

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

[20] ibid. Recommendation 1.

[21] ibid. Recommendation 2.

[22] ibid. Recommendation 15.

[23] ibid. Recommendation 16.

[24] *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 www.smos.gov.au/speeches/2009/sp_20090324.html, accessed 11 June 2009. See also *Powering Ideas: An Innovation Agenda for the 21st Century*, Chapter 6 (Public Sector Innovation) at p. 58, available at www.innovation.gov.au/innovationreview/Pages/home.aspx. (accessed 22 May 2009).

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

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.[26] 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'.[27]

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,[28] until a few years ago there was 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) up to around 2005. At the international level in particular, the Australian government appears not to have played a significant role (such as through 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 membership had lapsed some decades earlier.)

The issue of access to and re-use 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.[29] The landmark 1994 report, *Commerce in Content: Building Australia's International Future in Interactive Multimedia Markets*, commissioned from Cutler & Company by the federal government[30] 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, so as to accelerate the development of the digital content sector.[31] The recommendations included providing easy access to culturally significant data in

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

[27] Queensland is the first state to legislate, enacting the *Right to Information Act* 2009 and the *Information Privacy Act* 2009 and accompanying regulations, which came into force on 1 July 2009, see www.oic.qld.gov.au/legislation and 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 www.rti.qld.gov.au/downloads/Right%20to%20Information%20Principles.pdf.

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

[29] 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 www.csu.edu.au/special/conference/apwww95/papers95/tbarry/tbarry.html (accessed 1 September 2008).

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

[31] 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

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*,[32] 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'[33] and the adoption of 'mechanisms to enable the discovery of, and access to, data and information resources'.[34]

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 re-use of PSI. Unfortunately, the CLRC failed to contextualise its inquiry and recommendations within the framework of international developments and concepts about access to and re-use of government information and data.[35] Developments that have occurred in overseas jurisdictions in establishing systems for access to environmental information[36] have gone almost entirely

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Services Expert Group, 1994, Part 8: The role and contribution of government, available at www.nla.gov.au/misc/cutler/cutler8.html (at 16 July 2008).

[32] 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) www.dest.gov.au/sectors/science_innovation/publications_resources/profiles/Presentation_Data_for_Science.htm; see also pandora.nla.gov.au/tep/75221.

[33] Recommendation 1.

[34] Recommendation 6.

[35] 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 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 recognised 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'.

[36] 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

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 re-use 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 industry,[37] which has for many years 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'.[38] In fact, the most advanced data access and re-use 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[39] (known as the OSDM Policy) adopted by the Commonwealth government in 2001.

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.[40] 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.[41] The Open Access to Knowledge (OAK) Law and Legal Framework for e-Research projects established as part of the Research Information

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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.

[37] 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*, 16: 4, pp. 305–22; 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*, 1: 1, January 2008 at pp. 66–87, available at 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.

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

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

[40] See www.dest.gov.au/sectors/research_sector/policies_issues_reviews/key_issues/accessibility_framework/ and backingaus.innovation.gov.au/ (accessed 24 April 2008).

[41] See www.dest.gov.au/sectors/research_sector/policies_issues_reviews/key_issues/accessibility_framework/.

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 re-use.[42] Several universities (including QUT)[43] 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.[44] 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.[45]

At the state and territory level there is a lack of consistency in policies on access to and re-use of government information and data. States and territories have developed their own policies on information access and re-use 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.[46] However, while access is generally supported, there

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[42] See www.oaklaw.qut.edu.au and www.e-research.law.qut.edu.au/.

[43] See 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
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 eprints.utas.edu.au/) and Charles Sturt University (see bilby.unilinc.edu.au:8881/R?func=search&local_base=GEN01-CSU01) and are being considered at Macquarie University (see www.earlham.edu/~peters/fos/2008/07/macquarie-vc-preparing-to-propose-oa.html).

[44] Australian Research Council, Discovery Projects Funding Rules for funding commencing in 2008 www.arc.gov.au/pdf/DP08_FundingRules.pdf; National Health and Medical Research Council, Project Grants Funding Policy for grants commencing in 2008
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) www.arc.gov.au/pdf/response_PCdraftresearchreport_06.pdf.

[45] Australian Research Council, Discovery Projects Funding Rules for funding commencing in 2008, [1.4.5.1] 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].
www.nhmrc.gov.au/publications/_files/profundingpol.pdf.

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

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.[47]

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 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 and re-use), whether commercial or otherwise. [48] Geoscience Australia offers free downloads of geospatial data from its website, based on the OSDM Policy.[49] Whilst initiatives

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[47] KPMG Consulting (Garry Sears), *Geospatial Data Policy Study Project Report – Executive Summary*, prepared for GeoConnections Policy Advisory Node, March 2001, pp. 16–17, available www.geoconnections.org/programsCommittees/proCom_policy/keyDocs/KPMG/KPMG_E.pdf.

[48] Siu-Ming Tam, *Informing the Nation – Open Access to Statistical Information in Australia*, available at www.unece.org/stats/documents/ece/ces/ge.45/2009/wp.11.e.pdf and the presentation slides can be downloaded at www.unece.org/stats/documents/ece/ces/ge.45/2009/wp.11.e.ppt.

[49] See www.ga.gov.au/products/servlet/controller?event=DEFINE_PRODUCTS (accessed 22 May 2009).

such as these are important and provide evidence of a growing awareness of the importance of ensuring access to and re-use of PSI, they remain fragmented and separate and involve relatively few government departments and agencies.[50]

One of the most influential projects in Australia in recent years has been the Government Information Licensing Framework Project (GILF Project).[51] 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 re-use 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.[52] 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,[53] other state governments[54] and the New Zealand Government.[55]

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 re-use was acknowledged in the proposal for a

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[50] 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.

[51] See the GILF project website at www.gilf.gov.au.

[52] 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 www.qsic.qld.gov.au/qsic/QSIC.nsf/CPByUNID/BFDC06236FADB6814A25727B0013C7EE (accessed 22 May 2009). See also the GILF website at 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.

[53] See *Venturous Australia – Building Strength in Innovation,* report by Cutler & Co 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 www.innovation.gov.au/innovationreview/Pages/home.aspx (accessed 11 June 2009).

[54] 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 www.parliament.vic.gov.au/edic/inquiries/access_to_PSI/final_report.html.

[55] 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.

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.

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,[56] e-government[57] and geospatial information.[58] 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* in 1997.[59]

The *Policy Framework for New Zealand Government-held Information,* developed by the New Zealand Public Service chief executives and State Services Commission,[60] 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). It 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[61] 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'.[62] 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*,[63] released in 2008, contains strong statements about re-use

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

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

[58] 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.

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

[60] ibid.

[61] See the *Digital Strategy* website at www.digitalstrategy.govt.nz/.

[62] New Zealand Government, *Digital Strategy: Creating Our Digital Future*, May 2005, p. 11, available at www.digitalstrategy.govt.nz/upload/documents/MED11706_Digital%20Strategy.pdf.

[63] See generally www.digitalstrategy.govt.nz/Digital-Strategy-2/ and www.digitalstrategy.govt.nz/upload/Documents/Digital%20Strategy%202.0%20FINAL.pdf.

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.[64] 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.[65] Both of these databases are widely used by government agencies in environmental and resource management planning. The new licence enables the public to freely share and distribute environmental data and information without having to seek permission to use and re-use the data.[66] In the media statement 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'.

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 re-use 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 re-use of government information.[67] 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*[68] and the *United Nations Framework*

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[64] 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.

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

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

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

[68] *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 www.un.org/documents/ga/conf151/aconf15126-1annex1.htm.

Convention on Climate Change (UNFCCC).[69] 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'[70] 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'.[71] 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. [72] 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 Organization (UNESCO) played an important role in further developing policies and guidelines on access to PSI. The 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.[73]

During the last decade, the OECD[74] (through its Directorate for Science, Technology and Policy[75]) 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

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[69] *United Nations Framework Convention on Climate Change*, United Nations, 1992, United Nations document no. FCCC/INFORMAL/84, GE.05-62220 (E) 200705, available at 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.

[70] ibid. Article 4.1(g).

[71] ibid. Article 4.1(h).

[72] *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 unfcc.int/cop4/.

[73] For details, see Chapter 11 of this book: Paul Uhlir, *Policy Guidelines for the Development and Promotion of Governmental Public Domain Information*.

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

[75] See www.oecd.org/department/0,3355,en_2649_33703_1_1_1_1_1,00.html (accessed 22 May 2009).

endorsed the Seoul Declaration on the Future of the Internet Economy and supporting policy framework.[76] 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.[77] 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.[78] 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.[79]

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).[80] 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.[81]

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[76] 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 www.oecd.org/site/0,3407,en_21571361_38415463_1_1_1_1,00.html.

[77] *OECD Recommendation of the Council for Enhanced Access and More Effective Use of Public Sector Information* is included in Vol 2 of this book – Chapter 25.

[78] 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 the Digital Economy's *Digital Economy Future Directions* consultation paper, prepared by Brian Fitzgerald, Anne Fitzgerald, Jessica Coates and Kylie Pappalardo, 4 March 2009, p. 11, available at www.dbcde.gov.au/digital_economy/digital_economy_consultation/submissions (under 'Queensland University of Technology QUT Law Faculty) at 10 June 2009.

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

[80] 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 eprints.qut.edu.au/8865/.

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

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.[82] 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'.[83]

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).[84] 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 practicable: … (c) scientific observations and results from Antarctica shall be exchanged and made freely available.[85]

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). [86] 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

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

[83] ibid.

[84] *White Paper on the GEOSS Data Sharing Principles*, CODATA, Paris, September 2008, p. 10, available at www.earthobservations.org/documents/dsp/Draft%20White%20Paper%20for%20GEOSS%20Data%20S haring%20Policies_27Sept08.pdf.

[85] 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 www.austlii.edu.au/cgi-bin/sinodisp/au/other/dfat/treaties/1961/12.html?query=antarctic (accessed 5 June 2009).

[86] See the GEOSS home page at www.earthobservations.org/geoss.shtml and the Wikipedia entry at en.wikipedia.org/wiki/GEOSS.

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.[87]

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 cooperation at the European level is found in the Convention that established the European Organisation for Nuclear Research (CERN) in 1953.[88] 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[89] requires research results to be 'made generally available':

> The Organisation shall provide for collaboration among European States in nuclear research of a pure scientific and fundamental character ... The Organisation 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.[90]

Building on commitments in the Rio Declaration (1992)[91] 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-

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[87] Group on Earth Observations (GEO), *GEOSS 10 Year Implementation Plan*, adopted 16 February 2005, p. 4, www.earthobservations.org/docs/10-Year%20Implementation%20Plan.pdf.

[88] See 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.

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

[90] See public.web.cern.ch/public/en/About/Mission-en.html (accessed 22 May 2009).

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

making about environmental matters.[92] In 2003 the European Parliament and Council adopted the Directive on Public Access to Environmental Information[93] 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[94] ('the PSI Directive'), adopted in 2003, and the Directive establishing an Infrastructure for Spatial Information[95] ('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 re-used. 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, 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 re-use 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.[96] In January 2008, the European Commission published a

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[92] Convention on Access to Information, Public Participation and Decision Making, and Access to Justice in Environmental Matters, Aarhus, Denmark, 25 June 1998, see www.unece.org/env/pp/documents/cep43e.pdf (accessed 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 www.fern.org/media/documents/document_4095_4108.pdf (accessed 22 May 2009).

[93] 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 eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32003L0004:EN:HTML (accessed 22 May 2009).

[94] 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 www.epsiplatform.com/reports/european_directive_on_psi/directive_2003_98_ec and eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32003L0098:EN:HTML (accessed 22 May 2009).

[95] 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 www.ec-gis.org/inspire/directive/l_10820070425en00010014.pdf and eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2007:108:0001:01:EN:HTML (accessed 22 May 2009).

[96] 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 ec.europa.eu/research/science-society/document_library/pdf_06/communication-022007_en.pdf (accessed 22 May 2009).

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.[97]

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[98] and establishing an effective administrative regime, central to which is the Office of Public Sector Information (OPSI).[99] 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),[100] the report on *Models of Public Sector Information Provision via Trading Trusts* ('the Cambridge Report')[101] and the

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[97] 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 eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52007DC0836:EN:NOT accessed 22 May 2009. See generally ec.europa.eu/avpolicy/other_actions/content_online/index_en.htm (accessed 22 May 2009).

[98] 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 eight EU member states to implement the Directive by the nominated date of 1 July 2005.

[99] www.opsi.gov.uk. The UK has also established an Advisory Panel on Public Sector Information, 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 www.opsi.gov.uk/advice/psi-regulations/uk-report-reusepsi-2008.pdf and *Unlocking PSI Potential: The United Kingdom Report on the Re-use of Public Sector Information* (2009), Office of Public Sector Information at 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 www.epsiplatform.com/good_practice/uk_psi_timeline. The UK has also established an Advisory Panel on Public Sector Information, www.appsi.gov.uk.

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

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

Power of Information Taskforce report (2009).[102] Throughout these reports are findings and recommendations that support the introduction of fundamental reforms to longstanding policies and practices on access to and re-use of PSI, including those of the Ordnance Survey Office[103] and other trading trusts.[104]

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.[105]

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.[106] 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.[107]

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 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

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

[103] 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 strategy.ordnancesurvey.co.uk/.

[104] 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 www.culture.gov.uk/what_we_do/broadcasting/6216.aspx. Note in particular, recommendation 79, p. 24.

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

[106] 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 www.cabinetoffice.gov.uk/strategy/publications/world-class-public-services.aspx (accessed 18 July 2009). See *Guardian* article, 4 June 2009 at www.guardian.co.uk/technology/2009/jun/04/free-our-data.

[107] See *Pioneer of the World Wide Web to advise the government on using data*, UK Cabinet Office, 10 June 2009, at 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 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 www.w3.org/DesignIssues/GovData.html (accessed 19 July 2009).

broadly within the scientific community.[108] 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.[109] 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[110] establishes the data access and re-use 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'.[111]

Open access remains a key point of interest in current US political and administrative discourse. In 2008, the US National Institutes of Health[112] (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[113] and the Faculty of Arts and Sciences[114]) introduced mandatory open access

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[108] 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 utilisation, the results of which ordinarily are restricted for proprietary or national security reasons'. See www.fas.org/irp/offdocs/nsdd/nsdd-189.htm (accessed 22 May 2009).

[109] 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.

[110] Office of Management and Budget, *Circular A-130 on Management of Federal Information Resources* (OMB Circular A-130) (2000) available at www.whitehouse.gov/omb/circulars/a130/a130trans4.pdf and www.whitehouse.gov/omb/circulars/a130/a130trans4.html. See further Fitzgerald, Literature Review, pp. 174–75, at www.aupsi.org/publications/reports.jsp.

[111] 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, www.whitehouse.gov/omb/circulars_a016_rev/#8.

[112] See NIH's Revised Policy on Enhancing Public Access to Archived Publications Resulting from NIH-Funded Research, at grants.nih.gov/grants/guide/notice-files/NOT-OD-08-033.html (accessed 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 grants.nih.gov/grants/guide/notice-files/NOT-OD-08-033.html.

[113] See www.law.harvard.edu/news/2008/05/07_openaccess.php.

[114] Adopted 12 February 2008, see www.fas.harvard.edu/~secfas/February_2008_Agenda.pdf. and 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

publishing policies, requiring peer-reviewed journal publications to be made available in open access repository.[115] 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'.[116] 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.[117] As part of the Obama administration's Open Government Initiative,[118] the data.gov portal was launched in May 2009 providing access to large numbers of federal datasets, which are continually being added to.[119] 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.[120] 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).[121] This is reflected in initiatives led by

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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.

[115] 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.

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

[117] *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 www.whitehouse.gov/the_press_office/Transparency_and_Open_Government/. See also the Press Secretary's Statement of 21 January 2009 at www.whitehouse.gov/the_press_office/StatementfromthePressSecretaryonthePresidentssigningoftwoExec utiveOrdersandthreeMe/ (accessed 14 July 2009).

[118] See www.whitehouse.gov/open/ and www.whitehouse.gov/open/blog/ (accessed 14 July 2009).

[119] 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 www.data.gov/details/14.

[120] Copyright Act 1985, s. 12.

[121] 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.

GeoConnections Canada, a national program, commenced in 1999, 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 Canadian Geospatial Data Infrastructure (CGDI).[122]

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 re-use 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,[123] 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).

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[122] 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.

[123] For details, see Chapter 11 of this book: Paul Uhlir, *Policy Guidelines for the Development and Promotion of Governmental Public Domain Information*.