Economic Development and
Infrastructure Committee

Inquiry into Improving Access to Victorian Public Sector Information and Data

June 2009

Inquiry into Improving Access to Victorian Public Sector Information and Data

Report of the Economic Development and Infrastructure Committee on the Inquiry into Improving Access to Victorian Public Sector Information and Data

ORDERED TO BE PRINTED

Victorian Government Printer 2009

Parliamentary Paper
No. 198 Session 2006-2009

Parliament of Victoria
Economic Development and Infrastructure Committee
Inquiry into Improving Access to Victorian Public Sector Information and Data
ISBN - 978 - 0 - 9751357-7-8

This report is printed on recycled paper.

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Committee Members

This Inquiry was conducted during the term of the 56th Parliament.

The members of the Economic Development and Infrastructure Committee are:

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Mr David Davis, MLC (Deputy Chair)

Mr Bruce Atkinson, MLC

Mr Peter Crisp, MP

Mr Hong Lim, MP (from 2 June 2009)

Mr Brian Tee, MLC

Mr Evan Thornley, MLC (until 9 January 2009)

Hon. Marsha Thomson, MP

Staff

For this Inquiry, the Committee was supported by a secretariat comprising:

Executive Officer:	Dr Vaughn Koops
Research Officer:	Ms Yuki Simmonds
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The Economic Development and Infrastructure Committee

The Victorian Economic Development and Infrastructure Committee is constituted under the *Parliamentary Committees Act 2003*, as amended.

The Committee comprises members of Parliament drawn from both houses and all parties.

Its functions under the Act are to inquire into, consider and report to the Parliament on any proposal, matter or thing connected with economic development, industrial affairs or infrastructure, if the Committee is required or permitted to do so by or under the Act.

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Terms of Reference

The Legislative Assembly under section 33 of the *Parliamentary Committees Act 2003* refers Terms of Reference requiring:

That the Economic Development and Infrastructure Committee inquire into, consider and report to Parliament on the potential application of open content[1] and open source licensing to Victorian Government information, and in particular, the Committee is asked to:

a) report on the potential economic benefits and costs to Victoria of maximising access to and use of Government information for commercial and/or non-commercial purposes, including consideration of:

   i. public policy developments elsewhere in Australia and internationally; and

   ii. the types of information that will provide the greatest potential benefit;

b) consider whether the use of open source and open content licensing models, including Creative Commons, would enhance the discovery, access and use of Government information;

c) report on the use of information and communication technology to support discovery, access and use of Government information; and

d) identify likely risks, impediments and restrictions to open content and open source licensing of Government information, including impacts on and implications for any existing cost recovery arrangements.

The Committee is required to report to Parliament by 30 June 2009.

[1] The Terms of Reference received by the Committee from the Legislative Assembly of the Parliament of Victoria referred only to 'open source licensing'. The Committee has determined that the intent of the Reference may be clarified by additional reference to 'open content licensing'. For comparison, the original Terms of Reference, as received from the Legislative Assembly, can be found in Appendix Three.

Chair's Foreword

In the 21st century, information is a powerful resource that can be used to drive innovation, commerce and social engagement in ways that were scarcely anticipated last century. One of the great and relatively untapped resources is information generated by government. There is a growing view that economies and communities would profit if more people were able to access and re-use government information.

In this context, the Economic Development and Infrastructure Committee was asked by Parliament to report on the benefits and costs to Victoria from maximising access to and use of Government information for commercial and non-commercial purposes. This raised a number of important questions for the Committee to consider – should government information be used for non-government purposes? How will businesses, and the public, benefit from further use of government information? Should people pay to access and use Government information? What information should be withheld from public use?

The Committee considered these and many other questions in depth during the course of this Inquiry, and concluded that Victorian Government public sector information (PSI) should be made more readily available for re-use wherever possible. The report contains 46 recommendations that the Committee believes will place Victoria at the forefront of international efforts to improve the way we use Government PSI.

The Committee has proposed three key recommendations for access to and re-use of Government information. First, the Committee recommends that the Victorian Government develop an Information Management Framework for the purpose of facilitating access to and re-use of Victorian Government information by government, citizens and businesses. The default position of the framework should be that all PSI produced by Victorian Government departments from now on be made available at no or marginal cost.

The second key recommendation of the Committee is that the Victorian Government make use of the Creative Commons licensing model for the release of PSI. The Committee was told Creative Commons licences can be appropriately used for up to 85 per cent of government information and data, providing a simple to understand and widely used system for the re-use of PSI. Remaining Victorian Government PSI should either not be released, or released under licences tailored specifically for restricted materials.

The Committee's third key recommendation is that the Victorian Government establish an on-line directory, where the public can search for and obtain information about PSI held by the Victorian Government. Depending on the access conditions Government has attached to specific PSI, people will be able to download information and data directly, or make contact with people in the Victorian Government to discuss access conditions.

The Committee supports these three key recommendations with suggestions for a range of measures that will facilitate the use and storage of Government PSI. These include measures to support implementation of the Information Management Framework, as well as measures to ensure data interoperability, and to avoid obsolescence of information and data over time.

The Committee also considers the use of open source software (OSS) within and by the Victorian Government. One of the Committee's recommendations is that the Government ensure tendering for software is neither licence specific nor has proprietary software-specific requirements, and that it meet the given objectives of Government.

The Committee received 80 written submissions during the course of this Inquiry, convened public hearings with 32 witnesses, and received a briefing from a Government representative. On behalf of the Committee I thank these people and organisations for their important contribution.

I thank my fellow Committee Members for their contribution to the Inquiry – Mr David Davis (Deputy Chair); Mr Bruce Atkinson; Mr Peter Crisp; Mr Brian Tee; the Hon. Marsha Thomson; and Mr Evan Thornley (until 9 January 2009). I also thank the Committee secretariat for their hard work and support throughout this inquiry – Dr Vaughn Koops, Ms Yuki Simmonds, and Ms Shanthi Wickramasurya.

Hon. Christine Campbell, MP

Chair

Executive Summary

Chapter One: Introduction

The Committee's Terms of Reference required it to examine the potential for open source licensing to be applied to Victorian Government information. The Committee determined to examine two areas of inquiry encompassed by the Terms of Reference – the application of open content licensing to Government information and data, and the use of open source licensed software by the Government.

The Inquiry responds to increasing interest in the private and public sectors, and internationally, in thinking about how information and data held by governments and other public organisations can best be used for the public good.

The use and distribution of public sector information (PSI) touches upon a range of critical issues for government, in which it must balance competing demands for and upon the information and data it holds, while ensuring that it acts appropriately as a custodian of that information and data. The release of PSI by the Victorian Government for re-use may lead to increased commercial activity, provide primary data to researchers in a wide range of disciplines, and increase transparency of government in Victoria.

The Inquiry also examines issues surrounding increased use of open source software (OSS) by the Victorian Government. OSS is software that can be redistributed and modified without the payment of fees or royalties, and for which the source code is made available.

Open source software already comprises a significant part of the global software makeup. The primary interest for users in the development and deployment of OSS is that it can potentially provide similar services to proprietary software at lower cost, as licence fees are not required.

Chapter Two: A new approach to the management of Victorian public sector information

Internationally, governments and the public sector are the largest holders of information of all kinds. With the development of information technology, the potential for information held by the public sector to contribute to a range of economic and socially beneficial outcomes has increased.

Recently a number of jurisdictions have introduced measures to improve access to and re-use of PSI, on the premise that doing so will produce economic and social benefits and returns. Quantitative data about economic benefits arising from increased commercial exploitation of PSI does not currently provide clear guidance for policy, but there is a growing view that new commercial enterprises will emerge as access to PSI improves.

The Committee considered evidence that improved access to and re-use of PSI may assist people to make more informed, and better, decisions about their businesses and activities. Improved access to PSI may also help to overcome the 'silo' effect in government, where government agencies do not effectively share or disclose the information they hold to other government agencies. In this context, improved access to and re-use of PSI may lead to improved efficiency in government, business, and for the public generally.

The best way for government to realise economic and efficiency gains from PSI is through the development of an overarching government Information Management Framework (IMF). The object of the IMF should be to facilitate access to and re-use of Victorian PSI. This can be achieved by the Government endorsing open access to PSI as its default position, and requiring that the Victorian Government, under the proposed IMF, define and describe conditions under which access to PSI can be restricted, and establish a systematic and consistent methodology for categorising and storing information and data. The IMF should be introduced prospectively for Government PSI, applying to information and data generated from now on.

Programs and policies that support improved access to and re-use of PSI will only be effective when government, business and citizens are able to identify what information and data exists. A comprehensive, searchable register of documents and materials held by Government is an essential component of any policy to improve access to PSI.

Chapter Three: Defining the 'public sector' for the Information Management Framework

A core task when considering implementation of the IMF for Government is to determine which institutions and agencies the policy will apply to. In the context of PSI, there are a wide range of existing definitions for what could comprise the public sector. These include definitions from relevant legislation in Victoria and the Commonwealth, which may include departments, statutory authorities, educational institutions, hospitals, local government, and so on.

While there are strong arguments in favour of enhancing access to PSI held by most public sector agencies and organisations, the argument for Government compelling all public sector agencies to make their information and data available for re-use is less clear cut. Consequently, the IMF should apply initially only to Victorian Government departments.

Chapter Four: Criteria for determining the release of public sector information

The Inquiry's Terms of Reference required the Committee to consider the types of PSI that would provide the greatest benefit if made more accessible. In recognition of the diverse range of government-owned materials, the Committee suggested that the Victorian Government should encourage departments to identify materials to publish proactively on their websites.

There are a number of valid reasons for restricting access to government-owned information and data. One of the most important reasons for restricting access is in order to preserve a person's right to privacy, and in particular to prevent the disclosure of identifying information about individuals or groups of individuals. Consequently, certain PSI should not be released except where it is possible to remove personal information from the information or data.

The *Freedom of Information Act 1982 (Vic)* protects the disclosure of documents that affect the personal affairs of another person, as well as documents that are commercial-in-confidence; contain information that would undermine law enforcement; or were supplied in confidence. Secrecy considerations also provide sufficient reason for governments to restrict access to PSI. Access to PSI may also be restricted when materials are subject to specific contractual arrangements, and when information and data contained within the PSI is under development or incomplete.

The release of Victorian Government PSI will likely result in instances where errors in information or data, or unintended disclosure, leads to non-government users of PSI or third parties considering legal action against the Government. The Victorian Government will need to seek legal advice and ensure it is fully covered for legal action that may arise in association with the release of PSI.

Chapter Five: Issues surrounding selected public sector information

Governments generate and hold a diverse array of PSI, most of which has the potential to be used for economic and social benefit. On this basis, the Committee identified particular categories of PSI to which access could be improved.

The spatial information industry makes a significant contribution to the Australian economy. The Victorian spatial information industry, for example, generated total revenue of $410 million in 2008. However, the absence of comprehensive policies around quality of data and licensing within and across governments has resulted in ongoing issues with access to spatial information. The Committee identified opportunities to improve conditions for access to and re-use of spatial data in Victoria, and allow this data to contribute to new commercial and public services and research.

Australian governments make a significant contribution to scientific inquiry and research and development (R&D), with the Victorian Government making a major contribution through its Science and Innovation Initiative (STI). Improved access to publicly funded research will likely encourage collaboration and collective learning, and improve the efficiency of government investment in R&D. A number of international and Australian publicly funded research councils now claim to support open access to research findings.

All Australian education departments provide schools, TAFES and universities with resources to support teaching and learning activities. There are few limitations on access to these education materials as they

are often made available on government websites. However, costs associated with copying and communicating these materials may act as a barrier to extensive use by schools.

The Committee considered a number of initiatives that promote cost-effective copyright practices, and proposed strategies to simplify current arrangements for the disbursement of fees from schools to Government departments.

Chapter Six: Licensing public sector information

The Committee considered appropriate licensing systems to enhance access to and re-use of Victorian Government PSI, and noted that copyright offers governments a simple and effective way to maintain the quality and authenticity of their materials.

The Committee received evidence that inconsistent licensing systems across and within government obstruct access to PSI. A consistent whole-of-government licensing system is required to achieve greater efficiency in the management of copyright throughout the Victorian Government.

Open content licensing systems can increase access to and re-use of PSI without requiring governments to relinquish IP rights. Open content licences facilitate open access to copyright material by making materials available for re-use on liberal terms. Most evidence received by the Committee supported the application of open content licences to Victorian Government PSI.

A range of open content licences currently exist, with the Creative Commons (CC) licensing model most widely recognised. The Australian model of CC comprises six licences, all of which are non-discriminatory. The Committee noted that momentum for the use of CC by Australian public sector agencies is increasing. The Committee also received evidence that the CC licences can be applied to 85 per cent of PSI.

Access to and re-use of Victorian Government PSI will be most effectively implemented through the use of CC licences. Adoption of CC by the Victorian Government will help to obtain licence interoperability across the public service, and work towards inter-jurisdictional harmonisation of copyright arrangements across Australia.

The Victorian Government should adopt a hybrid licensing model, comprising the CC licences for most PSI, and tailored licences for the remaining PSI where restricted access is warranted. For PSI released under CC, the Victorian Government should attach licensing conditions that facilitate information and knowledge flows, and experimentation with existing knowledge.

Chapter Seven: Pricing public sector information

Four pricing models for application to PSI usually cited in the literature are: no costs; marginal costs; cost recovery; and profit maximising. The Committee considered the application of the first three models to PSI, as profit maximisation is not a common pricing strategy in the Victorian Government. Cost recovery is currently the core pricing strategy of the

Victorian Government, with the Victorian spatial information industry also applying cost recovery to the pricing of spatial data.

The application of no cost or marginal cost pricing to information products, in particular those considered part of the Victorian Government's "basic information product set", is the most effective method to achieve economic efficiency.

While cost recovery pricing reduces reliance on general taxation revenue, the application of no cost or marginal costs to PSI may maximise its economic and social value. No cost or marginal cost pricing facilitates access to PSI within the broader community. Internationally, in response to growing evidence regarding the benefits associated with the marginal cost model, there has been a clear shift in the pricing policies of various countries that have traditionally adopted cost recovery.

Cost recovery can enhance economic efficiency if it is appropriately implemented. For example, cost recovery is appropriate when attached to the provision of products that are additional to the basic information product set at the request of individual users. Cost recovery is inappropriate if those products have public good characteristics and/or produce significant positive externalities.

A shift in the Victorian Government's pricing policy from cost recovery to no costs or marginal costs will likely create more opportunities for the community and private sector to re-use and add value to PSI.

Chapter Eight: Technical infrastructure for the release of public sector information

Technical infrastructure will be required to support implementation of the Victorian Government IMF. A critical feature of the technical infrastructure will be its interoperability, which can be achieved through the adoption of agreed standards for information storage and delivery formats, metadata frameworks and data directories.

The Victorian Government should adopt open standard formats for generation and storage of its PSI wherever possible. This will ensure that the Government minimises the chances of vendor and software 'lock-in', and maximises opportunities for effective archival storage of Government PSI.

The most effective way for the Victorian Government to make its PSI available for re-use will be through a system of decentralised custodianship. This will ensure that the people or agencies with expertise in particular PSI maintain their role as principle custodians of it. The implementation of department-based and decentralised custodianship will require high level commitment from the Victorian Government to ensure its success.

An effective policy for access to and re-use of PSI will only be successful when people are able to identify what information exists and where it is held. The Victorian Government should require that metadata records be developed for its PSI under an agreed standard, such as the Australia

Government Locater Service (AGLS) metadata standard. Maintenance of PSI metadata should also be performed by PSI custodians through a decentralised model.

In order to facilitate discovery, the Victorian Government should develop a searchable, whole-of-government PSI directory. This should draw together the metadata generated by PSI custodians, and be hosted at a single agency.

Chapter Nine: Supporting actions for the implementation of the Information Management Framework

The Committee recommends that implementation of the Victorian Government IMF be supported by a number of mechanisms. These include the establishment of a whole-of-government steering committee. The steering committee should have responsibility for overseeing, guiding and implementing the Victorian IMF, and be required to report regularly on its progress to the Minister responsible for the IMF.

A key feature of the Victorian Government IMF should be a focus on interoperability, particularly through the adoption of open standards for data generation, documentation, and storage. The value of the IMF will be further enhanced if it is designed to be interoperable with other jurisdictions, nationally and internationally. For this reason, the Victorian Government should liaise with, and if necessary lead, national harmonisation in approaches to access to and re-use of PSI.

The establishment of the Victorian Government IMF will only achieve its full potential when there is high public awareness of the Victorian Government's actions in this area. For this reason, facilities for access to and re-use of PSI should be widely promoted once it is operational.

The effectiveness and value of the IMF will be further enhanced with the establishment of a reporting mechanism. This will allow the IMF to be continually appraised, for public servants and the public to refine the system, and for complaints to be considered.

Chapter Ten: Open Source Software

OSS is currently used alongside proprietary software in a wide range of environments and for diverse purposes. OSS is generating interest internationally because the licensing model appears to offer opportunities for significant ICT cost savings, while offering comparable security and support to proprietary software.

In practice, a cost comparison of OSS and proprietary software will always be best determined on a case-by-case basis. The Total Cost of Ownership (TCO) for both proprietary software and OSS will be determined by a number of factors, of which licensing conditions comprise only one part.

In order to ensure that the Victorian Government can obtain the best software solutions at least cost, it should ensure that its software procurement processes do not discriminate against either model. The Victorian Government may achieve this by ensuring: that public servants

are aware of, and comfortable with, the use of products licensed under both models; and that its requests for tenders do not require the use of proprietary software, standards or formats.

Table of Recommendations

Table of Findings

Abbreviations

ABS	Australian Bureau of Statistics
ACC	Australian Copyright Council
AGIMO	Australian Government Information Management Office
AGLS	Australian Government Locater Service
ALRC	Australian Law Reform Commission
ANDS	Australian National Data Service
ANZLIC	The Spatial Information Council of Australia and New Zealand (formerly known as the Australia New Zealand Land Information Council)
ARC	Australian Research Council
AS	Australian Standard
ASDD	Australian Spatial Data Directory
ASIBA	Australian Spatial Information Business Association
BBC	British Broadcasting Corporation
BC	British Columbia
BOM	Bureau of Meteorology
CAL	Copyright Agency Limited
CC	Creative Commons
CCA	Commonwealth Copyright Administration
CFA	Country Fire Authority
CLPC	Cyberspace Law and Policy Centre
CLRC	Commonwealth Law Review Committee
COAG	Council of Australian Governments
CSIRO	Commonwealth Scientific and Industrial Research Organisation
Cth	Commonwealth of Australia
DCMES	Dublin Core Metadata Element Set
DEECD	Department of Education and Early Childhood Development
DEEWR	Department of Education, Employment and Workplace Relations
DEST	Department of Education, Science and Training
DIIRD	Department of Innovation, Industry and Regional Development
DoJ	Department of Justice

DPC	Department of Premier and Cabinet
DPCD	Department of Planning and Community Development
DPI	Department of Primary Industries
DSE	Department of Sustainability and Environment
DSTO	Defence, Science and Technology Organisation
ESTA	Emergency Services Telecommunications Authority
EU	European Union
FoI	Freedom of Information
GDP	Gross Domestic Product
GILF	Government Information Licensing Framework
GML	Geography Markup Language
GPL	General Public Licence
GPS	Global Positioning System
HTML	HyperText Markup Language
ICT	Information and Communication Technology
INSPIRE	Infrastructure for Spatial Information in the European Community Directive
ISO	International Organisation for Standardisation
IMF	Information Management Framework
IP	Intellectual Property
IPRIA	Intellectual Property Research Institute of Australia
MCEETYA	Ministerial Council on Education, Employment, Training and Youth Affairs
MIT	Massachusetts Institute of Technology
NEALS	National Education Access Licence for Schools
NHMRC	National Health and Medical Research Council
NZ	New Zealand
OAK	Open Access to Knowledge
OCPC	Office of the Chief Parliamentary Counsel
OESR	Office of Economic and Statistical Research
OGC	Open Geospatial Consortium
OMB	Office of Management and Budget
OECD	Organisation for Economic Co-operation and Development
OPSI	Office of Public Sector Information
OSS	Open Source Software
OSI	Open Source Initiative
PDF	Portable Document Format

PROV	Public Records Office Victoria
PSI	Public Sector Information
PSRA	Publicly Funded Research Agencies
QGCIO	Queensland Government Chief Information Officer
QSIC	Queensland Spatial Information Council
QUT	Queensland University of Technology
R & D	Research and Development
RDF	Resource Description Framework
SCAG	Standing Committee of Attorneys-General
SES	State Emergency Service
STI	Science and Technology Initiative
TCO	Total Cost of Ownership
UK	United Kingdom
US	United States
VCOSS	Victorian Council of Social Services
Vic	Victoria
VSC	Victorian Spatial Council
VSDD	Victorian Spatial Data Directory
W3C	World Wide Web Consortium
XML	eXtensible Markup Language

Definitions

Open content licences

Open content licences are licences that operate within existing copyright frameworks and make copyright materials and the terms of re-use available on liberal terms. Open content licences are typically standardised and machine readable. As they are automated, negotiation is typically not required between the licensor and potential licensees.

Open source software

Open source software is computer software for which the source code is made available under a licence that allows users to use, change or alter the software, and redistribute it in modified or unmodified forms.

Chapter One: Key points

- The Inquiry considers the potential for open content licences, where documents and other materials are offered for use or re-use by anyone either without conditions or conditionally, to be applied to Victorian public sector information.

- The Inquiry also examines issues surrounding increased use of open source software, which is software that is typically redistributable and modifiable, by the Victorian Government.

- The principle focus of the Committee's Inquiry under the Terms of Reference is on issues surrounding the management of data generated by the Victorian public sector. The Inquiry responds to increasing interest in the private and public sectors, and internationally, in thinking about how information and data held by governments and other public organisations can best be used.

- During the course of the Inquiry, the Committee received 80 submissions, and convened six public hearings, meeting with 32 witnesses representing 24 organisations. The Committee was briefed on the Inquiry by a representative from the Department of Innovation, Industry and Regional Development.

1

Chapter One: Introduction

On 27 February 2008 the Economic Development and Infrastructure Committee received a reference under the *Parliamentary Committees Act 2003* to inquire on the potential application of open content and open source licensing to Victorian Government information. In particular, the Committee was asked to:

a) report on the potential economic benefits and costs to Victoria of maximising access to and use of Government information for commercial and/or non-commercial purposes, including consideration of:

    i. public policy developments elsewhere in Australia and internationally; and

    ii. the types of information that will provide the greatest potential benefit;

b) consider whether the use of open source and open content licensing models, including Creative Commons, would enhance the discovery, access and use of Government information;

c) report on the use of information and communication technology to support discovery, access and use of Government information; and

d) identify likely risks, impediments and restrictions to open content and open source licensing of Government information, including impacts on and implications for any existing cost recovery arrangements.

The Committee notes that the Terms of Reference received from the Legislative Assembly of the Parliament of Victoria referred only to 'open source licensing' rather than 'open content and open source licensing'. The Committee has determined that the intent of the Reference may be clarified by additional reference to 'open content licensing'. For comparison, the original Terms of Reference, as received from the Legislative Assembly, can be found in Appendix Three.

1.1 Access to public sector information

The major focus of the Committee's Inquiry is on issues surrounding the management of information and data generated by the Victorian public sector. The Committee's Terms of Reference for this Inquiry draw upon interest in the private and public sectors, and internationally, in thinking about how information and data held by governments and other public organisations can best be used for the public good. While there has been a tendency in Australia and elsewhere to treat public sector information (PSI)

as a resource for primary, and even exclusive, use by the public sector, there has been recent interest in the commercial and social benefits that could eventuate if PSI was opened up to the wider public.

1.1.1 Key issues for access to PSI

This Inquiry addresses a number of core issues for government, as it is concerned with the organisation, distribution and dissemination of information and data created by government in order for it to fulfil its functions. Government has a number of choices for the release of information, including whether it should be sold to raise revenue, or whether it should be freely released to stimulate business, research and/or social innovations.

The Committee is aware that in proposing changes to the way PSI is managed in Victoria, a cultural change in the way the public service regards its information and data may be required. Australia does not have a developed tradition of government disclosure of fundamental data, and it is possible that making PSI more freely available to the public will require efforts to change the way public service 'custodians' of data regard their materials.

Evidence the Committee received during the course of this Inquiry has led it to believe that Victoria stands to gain a great deal from making its PSI available for use and re-use by the public. Making PSI more freely available may lead to increased commercial activity, provide valuable primary data to researchers in a wide range of disciplines, and increase the public transparency of government in Victoria.

1.2 Opportunities for the use of open source software

The Inquiry's Terms of Reference required the Committee to examine the application of open source licensing to Victorian information. The Committee consequently elected to examine the use of open source software (OSS) in the context of the operations of the Victorian Government.

OSS is principally distinguished from proprietary software by the fact that the former can be used by anyone without needing to pay royalties or fees to the creator of the software, and (usually) the user of OSS is free to change or alter it, or redistribute the software under the same conditions. OSS is typically released as source code – that is, as a file comprised of precompiled programming language which is human-readable – and frequently as a compiled program. Proprietary software is usually sold or distributed as a compiled product, so that the content of proprietary software is not able to be obtained and read by humans, and the software itself cannot easily be altered.

1.2.1 Key issues for use of open source software

OSS already comprises a significant part of the global software makeup. Many back-end applications are currently supported by or run on open

source software, such as Linux related products.[2] Recently a number of products have also been developed to make OSS more widely used as a front-end computing solution – that is, through applications or operating systems that are used on desktops, workstations or laptops.

The primary interest for users in the development and deployment of OSS is that it can potentially provide similar services to proprietary software at lower cost, as licence fees are not required. From a software and IT management perspective, one attraction of OSS is that it typically offers more potential for modification than proprietary software. As a consequence software administrators and programmers within an organisation may modify code to suit their needs with few, or no, restrictions.

1.3 Inquiry process

The Committee advertised the Terms of Reference and called for written submissions in Victorian and national newspapers in July 2008. The Committee received 80 written submissions (see Appendix One).

Six public hearings were convened from August 2008 through to November 2008. Details of hearings are provided in Appendix Two. The Committee took evidence from and met 32 witnesses representing 24 organisations, hearing from government agencies and non-government organisations; peak industry groups; industry experts; and businesses working in the information and open source industries. The Committee was briefed on matters pertaining to the Inquiry by a representative from the Department of Innovation, Industry and Regional Development in April 2008.

Many individuals and organisations contributed to this Inquiry by making written submissions and participating at public hearings. The Committee is grateful to these people for generously sharing their expertise and ideas.

[2] Linux is one of the most prominent examples of a free software and open source operating system. It is built with a collaborative development model, with the operating system and most of its software created by volunteers, governments and various organisations. The operating system is free to use and everyone has the freedom to contribute to its development.

Chapter Two: Key points

- Governments and the public sector are among the largest holders of information of all kinds. Internationally there has been increasing interest in providing greater access to, and use of, government information and data in order to stimulate commercial enterprise and social engagement.

- While there is currently little empirical or quantitative data demonstrating economic benefits arising from commercial exploitation of public sector information (PSI), there is a growing international view that greater access to and re-use of PSI will lead to the development of new businesses and services.

- Improved provision and sharing of PSI may also benefit business, government and the public through increased transparency of government, more efficient use of information and reduced replication of research effort, and provide base data from which innovative products and policy solutions can be developed.

- Effective access to and re-use of PSI is only useful when it is possible to identify what information exists.

- The development and implementation of a whole-of-government Information Management Framework will allow the Victorian Government to capture a range of benefits from improved use of its information and data.

Chapter
2

Chapter Two:
A new approach to the management of Victorian public sector information

The development of information and communication technology, and in particular the widespread use of digital technologies, has opened up a range of new possibilities and opportunities for the use of information. Internationally, governments and the public sector are the largest holders of information of all kinds, and so the potential for information held by the public sector to contribute to a range of economic and socially beneficial outcomes has increased along with the development of information technologies.

Whereas a few decades ago the principal means for public sector information (PSI) to be disseminated to communities and utilised by business was through hard-copy publishing or traditional media, digital technologies have dramatically increased possibilities for the diffusion of PSI. Contemporary information and communication technologies (ICTs) allow government departments to publish a wide range of materials at minimal cost through their internet websites, often without recourse to traditional publishing services.

Along with these developments there has been increasing recognition of the potential for dissemination of PSI to contribute to positive social and economic outcomes. PSI from the United States (US), a large proportion of which has for many years been freely provided for general use by the public, is now a key input in a number of high profile services provided to the world through the internet – including, for example, Google Maps, meteorology services, and satellite mapping and Global Positioning System (GPS) services. It is clear that the overall economic and social contribution of this information and data is substantial, and benefits not only citizens and businesses in the US, but also the international community.

Similarly, a Victorian-based example was brought to the Committee's attention by Mr Graeme Martin, a Victorian representative of the Australian Spatial Information Business Association (ASIBA). The Vicmap books, comprising map-based spatial information, are used extensively by the Country Fire Authority (CFA), Victoria Police and State Emergency Services (SES). According to Mr Martin, Vicmap is considered an essential component of emergency management in Victoria.[3]

[3] Graeme Martin, Manager, Consulting, Spatial Vision, *Transcript of evidence*, Canberra, 13 August 2008, p. 4.

2.1 Recent policy developments

2.1.1 International

The emerging international view is that the large repositories of information and data held by the public sector could be used to generate profit for businesses, and hence improve the welfare of national economies, improve transparency in public sector management, and improve the engagement of citizens with their governments.

In the United States, President Barack Obama presented a memorandum entitled *Transparency and open government* to the heads of executive departments and agencies on his first full day in office in January 2009. The memorandum states:

> My Administration is committed to creating an unprecedented level of openness in Government. We will work together to ensure the public trust and establish a system of transparency, public participation, and collaboration. Openness will strengthen our democracy and promote efficiency and effectiveness in Government.[4]

In the memorandum, the President requested that the Chief Technology Officer coordinate the development of recommendations for an open government directive with appropriate executive departments and agencies within 120 days.

As part of the *Transparency and open government* initiative, the US federal government launched *Data.gov* in May 2009, a searchable data catalogue that provides access to federal government raw data and datasets. A key objective of Data.gov is to improve public access to high value and machine readable datasets and facilitate the creative use of those datasets. It is also intended that the initiative will create an unprecedented level of openness in the government.[5]

The emerging international view around improved access to and re-use of PSI is reflected in the Organisation for Economic Co-operation and Development's (OECD's) *Seoul declaration for the future of the internet economy*, which was endorsed at the Ministerial meeting on the future of the internet economy in June 2008.[6] The declaration recommended that public sector information and content, including scientific data, and works of cultural heritage be made more widely accessible in digital format.[7] The background document to the declaration also proposed under the *Recommendation of the Council for enhanced access and more effective use of public sector information* that OECD member countries consider other recommendations in the context of improved access to PSI, including:

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[4] President Obama, 'Transparency and open government', viewed 2 February 2009, <http://www.whitehouse.gov>.
[5] Office of Management and Budget, 'Data.gov', viewed 29 May 2009, <http://www.data.gov/>.
[6] Organisation for Economic Co-operation and Development, 'The Seoul declaration for the future of the internet economy', viewed 25 June 2008, <http://www.oecd.org>.
[7] Organisation for Economic Co-operation and Development, 'The Seoul declaration for the future of the internet economy', viewed 25 June 2008, <http://www.oecd.org>.

- maximising the availability of PSI for use and re-use based upon the presumption of openness as the default rule; and

- encouraging broad non-discriminatory competitive access and conditions for re-use of PSI by eliminating exclusive arrangements, and removing unnecessary restrictions on the ways in which it can be accessed, used, re-used, combined or shared.[8]

An extract of relevant sections from the *Recommendation of the Council for enhanced access and more effective use of public sector information* is provided in Appendix Four.

In the European Union (EU), the European Commission introduced the EU *Directive on the re-use of PSI* in 2003, which aimed to regulate the behaviours of public sector bodies in Member States when they trade information in the market or make it available for re-use.[9] All Member States were required to have implemented the Directive by 1 July 2005. A recent review of the Directive's adoption across the EU indicated it had created new opportunities for the information industry to exploit PSI for value-added products and services, and had improved conditions for public sector bodies to disseminate, share and allow re-use information and data.[10] The Committee is aware of calls by some Member States for the introduction of new provisions to the Directive to further improve access and re-use of PSI.[11]

2.1.2 Australia

In Australia, there has been increased interest in the role enhanced access to PSI may have as a key driver for innovation, economic growth and social engagement. A recent example is the final report of the Review of the National Innovation System, *Venturous Australia*, released in September 2008.[12] The review was commissioned by the Australian Government's Department of Innovation, Industry, Science and Research, and provides a "blueprint for the remodelling of Australia's innovation system."[13] The report contains 72 recommendations, a number of which focus specifically on maximising the value of PSI to enable it to significantly contribute to Australia's innovation system. In reference to the role of information, the report stated:

> Information is crucial to functioning markets and is not well provided in many markets, particularly for expert services. Governments can improve information flows and support innovation and economic efficiency by

[8] Organisation for Economic Co-operation and Development, 'Shaping policies for the future of the internet economy', viewed 25 June 2008, <http://www.oecd.org>.
[9] European Commission, 'Directive 2003/98/EC of the European Parliament and of the Council of 17 November 2003 on the re-use of public sector information', *Official Journal of the European Union*, 2003.
[10] European Commission, 'Public consultation: Review of the PSI Directive', viewed 9 December 2008, <http://ec.europa.eu>.
[11] Michael Cross, 'Austrian mountains: now 93% cheaper', *The Guardian*, 19 June 2008, viewed 18 April 2009, http://www.guardian.co.uk.
[12] Review of the National Innovation System, *Venturous Australia*, Cutler & Company Pty Ltd, North Melbourne, 2008.
[13] Dr Terry Cutler, 'Release of the review of the national innovation system', viewed 7 April 2009, <http://www.innovation.gov.au>.

> encouraging disclosure, assisting markets for reputation to develop, and by ensuring that the information and other 'content' that they fund is freely available to maximise its use and the value that others can add to it. [14]

Recommendations relevant to this Inquiry, proposed in Chapter Seven of the *Venturous Australia* report, are listed in Appendix Five of this report.

The Victorian Government's submission to the Review of the National Innovation System stated that most innovation occurs through the diffusion of knowledge practices and technologies, which can be "rapid when benefits exceed the costs, that is they are accessible, they are well understood and the community is informed about them, they are well priced, and there are incentives (for example, competitive pressures) that drive uptake."[15]

In September 2008, the Commonwealth Minister for Broadband, Communications and the Digital Economy, Senator Stephen Conroy, announced development of a *Future directions paper for the digital economy*. The purpose of the paper is to establish a roadmap for Australian businesses, households and government to maximise participation in the digital economy. As part of this initiative, the Department of Broadband, Communication and the Digital Economy set up a blog as a communication platform to allow individuals to express their views. One of the key themes explored in the blog is whether there are benefits for the digital economy from open access to PSI. Introducing this blog, the Department stated that "Australian Government agencies are working together to scope policy development for a national approach to open access to certain categories of PSI in appropriate circumstances."[16] The Future directions paper for the digital economy is scheduled for release by mid-2009.

2.2 Potential for economic and social returns

2.2.1 Commercial exploitation of PSI

Arguments from overseas governments in favour of improved access to PSI have focused on the potential for increased economic return. Some proponents argue that the costs incurred by government from the release of PSI to the public – either through lost licensing revenue, or costs associated with information and data distribution – will be offset by economic returns to government and the economy as a result of increased commercial activity from the use of that data.

Work done to date on the amount of new commercial activity that could develop from improving access to PSI has tended to use the US as a benchmark. The methodology employed is usually to: a) determine the contribution of PSI-derived commercial activities in the US, where access to (federal) PSI is free and not subject to copyright; b) determine the

[14] Review of the National Innovation System, *Venturous Australia*, Cutler & Company Pty Ltd, North Melbourne, 2008, p. 6.
[15] Victorian Government, *Submission*, no. 621, Review of the National Innovation System, Department of Innovation, Industry, Science and Research, p. 9.
[16] Department of Broadband Communications and the Digital Economy, 'Open access to public sector information', viewed 7 April 2009, <http://www.dbcde.gov.au/>.

contribution of PSI-derived commercial activities in the country in question (where access is typically restricted, and subject to copyright); and c) estimate commercial activity if the second country had a PSI sector comparable to the US. As the US has a comparatively large PSI-derived commercial sector, proponents argue that a move toward freer access to PSI would consequently benefit the economy.[17]

A different methodology was used in a recent study conducted for the United Kingdom (UK) Office of Fair Trading. The *Models of public sector information provision via trading funds* report analysed revenue and economic activity effects by looking at the UK's six largest trading funds (trading funds are required by statute to recover their costs principally through income derived from operations within the trading fund). The report analysed the effect average cost (i.e. cost recovery) and marginal cost pricing policies would have if implemented for each trading fund. The report found that, in general, it was preferable to price unrefined (i.e. raw) data products at marginal cost, and to price refined products at cost recovery:[18]

> This report has shown that the case for pricing no higher than marginal cost (which, for most digital data will be zero) on basic data products is very strong, for a number of complementary reasons. First, the distortionary costs of average rather than marginal cost pricing are likely to be high, for several reasons. The mark-up to cover fixed costs is high, as marginal costs are such a low fraction of average costs. The demand for digital data as with other information services is likely to be high and growing. Finally, there are likely to be large beneficial spill-overs in inducing users to innovate new services based on the data, as is evidently the case for other ICT services. Second, the case for hard budget constraints to ensure efficient provision and induce innovative product development is weak for public enterprises not subject to regulation and providing monopoly services without fear of competition. It would be far better to address issues of incentives, regulation and commitment explicitly rather than indirectly through budget constraints. Finally, for several services, the Government is already providing effectively a large contribution to fixed costs, without allowing the public to enjoy the benefits of efficient pricing.[19]

The report found that the potential for growth in innovative services using raw data from the public sector was likely to be high – in particular, for the data typically provided by the UK trading funds – meteorology, cadastral and spatial, hydrography, land registration, companies information and driver and vehicle licensing.[20]

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[17] For example, Pira International Ltd, *Commercial exploitation of Europe's public sector information - Executive Summary*, European Commission Directorate-General for the Information Society, Luxembourg, 2000.
[18] Similar to the pricing policy currently employed by the ABS.
[19] David Newbery, et al., *Models of public sector information provision via trading funds*, Department for Business, Enterprise and Regulatory Reform and HM Treasury, London, 2008, pp. 123-124.
[20] David Newbery, et al., *Models of public sector information provision via trading funds*, Department for Business, Enterprise and Regulatory Reform and HM Treasury, London, 2008.

In his presentation to the Committee, Dr Terry Cutler referred to a study that measured the indirect economic impact of the Massachusetts Institute of Technology (MIT) on the US community. While the study did not relate directly to PSI, it offers an alternative way of thinking about the economic returns of improved access to PSI:

> I think the best study I have seen of that is in fact quite an old study now of 1997 between MIT in the US and the Bank of Boston in looking at the economic impact of MIT as a university. Instead of trying to measure the value of spinouts, which are a sort of a surrogate for information, if you like, it basically measured the economic value of the companies that MIT graduates created in the long run, which was massive. Now, MIT did not capture that but the American public did, and whether you are seeing information embedded in individuals as skilled graduates or public sector information, you are talking about similar units, and to me that is the appropriate model in which to think about economic return.[21]

There is little concrete data indicating the quantum of return that could be expected to result from improved access to PSI. However, most studies argue that economic gains will occur through improved use of PSI. The Committee notes that governments from a great number of developed nations – including international organisations such as the OECD and the EU – regard prospects for economic benefit seriously enough to take steps to ensure PSI is opened up.

Finding 1: Quantitative data about economic benefits arising from increased commercial exploitation of public sector information (PSI) does not currently provide clear guidance for policy. There is a growing view, however, that new commercial enterprises will emerge as access to PSI is improved.

2.2.2 Efficiency improvements through use of PSI

Another way in which access to PSI may produce economic benefit is through enabling more efficient use of materials. This may occur if access to and re-use of PSI leads to individuals or organisations making better decisions, or using resources more efficiently. For example, the release and diffusion of information about road conditions could lead to more efficient uses of public and private transportation.

2.2.2.1 Commercial efficiencies from access to PSI

In its submission to the Inquiry, the Intellectual Property Research Institute of Australia (IPRIA) argued that the PSI could overcome a number of market failures resulting from imperfect information, and to benefit business, community and research sectors by:

- allowing businesses to make more accurate decisions about what to produce and where to produce it;
- allowing businesses to make better market forecasts and thus reduce waste associated with errors in production and marketing;

[21] Dr Terry Cutler, Principal, Cutler & Company, *Transcript of evidence*, Melbourne, 30 September 2008, p. 8.

- allowing community groups to more accurately monitor the welfare of their interest group; and

- providing researchers with more accurate information on which to base evidence-based policy advice.[22]

In the discussion paper for this Inquiry, the Committee noted a report commissioned for the Commonwealth Department of Education, Science and Training – *Research communication costs in Australia: emerging opportunities and benefits*. This report considered a number of efficiency and other benefits that could arise from improved access to public sector research data. The report provided the following estimate of potential economic returns from PSI:

> With public sector R&D expenditure at AUD 5,912 million and a 25% rate of social return to R&D, a 5% increase in accessibility and efficiency would be worth AUD 150 million a year.[23]

Economic benefits calculated in the report included direct returns on investment in Research & Development (R&D) to funding institutions, and indirect returns obtained from use of the research data in applications by a broader range of users. The Committee notes that it is difficult to quantify economic returns from improved access to PSI. Nevertheless, the likely effect of improved access to PSI is that it will lead to improved efficiency outcomes.

2.2.2.2 Government efficiencies from access to PSI

Another reason for improving access to PSI is to improve government use of its information and data. The Committee heard of cases where the use of PSI by government was obstructed because data were not made available from one department to another, or because interjurisdictional sharing of information and data was obstructed by concerns about copyright and ownership, or merely because the existence of data was not generally known. Dr Peter Crossman, Assistant Under Treasurer and Government Statistician of Queensland, Queensland Treasury, told the Committee:

> …there is a huge volume of administrative collections, and actually not all of them are well managed. There is a lot of inertia, lags, confusion and lack of integration. It is a pretty sorry mess just about everywhere. Individually there are great pockets of gold, but it is diffused and it is not organised particularly well. We have an imperfect understanding of what is out there. Data custodians sometimes know in isolation what they have got. People in the next workstation pod sometimes do not know what their colleagues have got. Many potential users do not know and cannot know therefore what is actually available to use for change—for innovative

[22] Intellectual Property Research Institute of Australia, *Submission*, no. 57, 29 August 2008, p. 3.
[23] John Houghton, et al., *Research communication costs in Australia: Emerging opportunities and benefits*, Department of Education, Science and Training, Canberra, 2006, p. 46.

> change, for re-design of policy, for better decisions and so on. There are imperfect incentives to inform and change.[24]

Through the course of this report, the Committee will consider a range of measures to improve access to PSI for the benefit of citizens and businesses in Victoria. However, the Committee also recognises that benefits from improving access to PSI will not only manifest in private commercial activities, or in improved efficiencies in the way that people do things – there are also substantial benefits to be gained from improving knowledge about, and sharing of, information and data within the public service. Better sharing of information and data within the public services would facilitate the development of policy, and reduce the potential for duplication of resources and labour in the delivery of services and policy advice.

The Committee notes there have already been moves in some policy areas to facilitate greater sharing and exchange of PSI between Australian governments. One example is the place-based information initiative, iPlace. iPlace was a web-based facility that sought to enable greater access to a range of government information relevant to a particular "place". The initiative was a response to implementing government policies outlined in *Growing Victoria Together, A Fairer Victoria*, and *Changing the Way Government Works*. iPlace was bundled with the broader "Service Victoria" submission to Policy and Strategy Committee (PSC) in August 2008. The PSC directed that iPlace functions be refined against existing mapping providers. Information Victoria (DIIRD) is currently acting upon this.[25]

In its submission to the Inquiry, the Bureau of Meteorology (BOM) advised of recent policy developments for sharing water data, systems and protocols across Australia. Under the *Water Act 2007 (Cth)*, specified agents, including state and territory governments, local government and other organisations are required to provide certain types of water information to the BOM for integration into a national water information system. According to the BOM, improved accessibility, integration and use of national water resources information will result in considerable benefits, and in particular more informed policy and infrastructure decisions. The BOM also advised the new system would allow for evaluation of the water sector reforms, which would lead to greater confidence in Australia's water management.[26]

Finding 2: Improved access to and utilisation of public sector information may result in economic benefits for the Victorian Government through greater efficiency in the allocation of resources and more informed decision-making and policy development processes.

[24] Dr Peter Crossman, Assistant Under Treasurer and Government Statistician, Office of Economic and Statistical Research, Queensland Treasury, *Transcript of evidence*, Queensland, 12 August 2008, p. 4.
[25] Simon de Sousa, Project Officer, Information Victoria, Department of Innovation, Industry and Regional Development, *personal communication*, 24 April 2009.
[26] Bureau of Meteorology, *Submission*, no. 17, 18 August 2008, p. 6.

2.2.3 Innovation through the use of PSI

An important argument for improved access to PSI is that government-owned information and data can be innovatively reworked and recombined into new products by people outside government. Consequently, new social and commercial uses, which may not have been anticipated by the creators or custodians of the original data, could emerge through innovative applications. This point was put to the Committee during a public hearing by Dr Terry Cutler:

> The originators of the material should not restrict the reusability of material because they expect it will be used in this way because we have seen that the greatest benefit actually comes from entrepreneurial third parties who see unexpected uses or who by combining information create new potential. I think the greatest administrative danger is people presuming that they know what this information will be useful for. And it is the unexpected use that is going to create the biggest economic benefit.[27]

Submissions to the Inquiry drew attention to economic benefits that may arise from enhanced access to and re-use of PSI, with many anticipating that access to PSI will lead to shared intellectual capital and innovation.[28] In most submissions, economic benefits were viewed as most likely to occur when PSI is made widely and freely available. In its submission to the Inquiry, Google Australia stated that by making PSI available to all organisations on the same terms, there would be an equal playing field for the creation of innovative products. On this basis, Google Australia argued that organisations would compete on the strength of their products, leading to greater productivity gains and economic development.[29] According to Google Australia, open access to PSI is the key to driving innovation across a range of sectors:

> We believe that open access to public sector information is good for us and for consumers, but it will also enable other organisations to come up with new and innovative products that can take open information and create their own types of things, whether it be about the Great Barrier Reef or Port Phillip Bay. We absolutely believe that we should measure success by the presence of constant innovation and advances in technology, and that openness is really something that we should be seeing as something that creates innovation rather than being something that is just for the benefit of one or two organisations.[30]

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[27] Dr Terry Cutler, Principal, Cutler & Company, *Transcript of evidence*, Melbourne, 30 September 2008, p. 5.

[28] Australian Bureau of Statistics, *Submission*, no. 63, 27 August 2008; City of Melbourne, *Submission*, no. 26, 19 August 2008; Creative Contingencies, *Submission*, no. 70, 5 September 2008; Cyberspace Law and Policy Centre, *Submission*, no. 68, 5 September 2008; Deakin University, *Submission*, no. 36, 22 August 2008; Google Australia, *Submission*, no. 54, 25 August 2008; Intellectual Property Research Institute of Australia, *Submission*, no. 57, 29 August 2008; Office of Spatial Data Management, *Submission*, no. 24, 20 August 2008; Open Source Geospatial Foundation Aust-NZ, *Submission*, no. 33, 2 August 2008; RP Data Ltd, *Submission*, no. 39, 22 August 2008; VicRoads, *Submission*, no. 58, 28 August 2008; Waugh Partners, *Submission*, no. 74, 5 September 2008; Wellington Shire Council, *Submission*, no. 40, 19 August 2008.

[29] Google Australia, *Submission*, no. 54, 25 August 2008.

[30] Carolyn Dalton, Head, Public Policy and Government Affairs, Google Australia, *Transcript of evidence*, Melbourne, 30 September 2008, p. 4.

Ms Caroline Dalton of Google Australia provided the Committee with an example of a recent collaboration between Google and the Great Barrier Reef Marine Park Authority. Information about the Reef has been applied to Google's mapping technology, and may assist scientists to track coral bleaching and assess other environmental issues, as well as be of use to tourism operators. [31] Mr Alan Noble of Google Australia told the Committee that this was the first time marine information had been made publicly available on Google Maps and Google Earth.[32]

In his presentation to the Committee, Professor Brian Fitzgerald of Queensland University of Technology (QUT) spoke of benefits associated with open innovation. Professor Fitzgerald referred to Goldcorp, which adopted open innovation as a mechanism to assist gold discovery in the Red Mine Lake in North Ontario. As Goldcorp did not possess sufficient in-house resources to locate new gold deposits, the CEO released 50 years of mining data to the public and offered a cash prize of $US100,000 to the person who located gold within Red Mine Lake. A Western Australian company was successful in winning first prize using the released data. Consequently, Goldcorp located new gold deposits by initiating a process of mass collaboration by sharing its intellectual property rather than holding onto it. According to Professor Fitzgerald, Goldcorp "stumbled successfully into the future of innovation, business and how wealth, and just about everything else, will be created."[33]

While the potential for innovation, through activities such as 'data mash-ups' was regarded by a number of witnesses as a particularly important outcome from improving access to PSI, the Committee notes advice from the University of Melbourne, that as with the other commercial benefits of access to PSI, benefits derived from innovation are difficult to quantify:

> Measuring general benefits like 'community engagement' or 'innovation and creativity' is likely to be difficult, as there is rarely a direct cause-and-effect relationship between the provision of information and the emergence of such outcomes.[34]

In this context, the Committee acknowledges the challenges for data custodians determining what PSI would be of most benefit if made accessible. The Committee does not believe it is appropriate that this be the responsibility of custodians, particularly when considering the subjectivity of such decisions. In reference to governments facilitating innovation, the Cyberspace Law and Policy Centre advised in its submission:

> Should the Victorian public sector increase access to information, innovation will be best encouraged without any distinction being made on whether that information is more appropriate for private sector developments or public knowledge or community benefit. Emphasis should

[31] Carolyn Dalton, Head, Public Policy and Government Affairs, Google Australia, *Transcript of evidence*, Melbourne, 30 September 2008, p. 3.
[32] Alan Noble, Head, Engineering, Google Australia, *Transcript of evidence*, Melbourne, 30 September 2008, p. 4.
[33] Prof Brian Fitzgerald, Professor of Intellectual Property and Innovation, Queensland University of Technology, *Transcript of evidence*, Queensland, 12 August 2008, p. 5.
[34] University of Melbourne, *Submission*, no. 34, 22 August 2008, p. 7.

> therefore be placed on releasing sets of information in a low-cost, accessible format. Innovation will flow from there.[35]

2.2.4 Potential for improved transparency and social engagement

In its submission to the Inquiry, the Australian Bureau of Statistics (ABS) argued that the increasing demand for PSI was being driven by two developments:

> First, governments and businesses are tackling questions which are increasingly cutting across traditional economic, social and environmental boundaries. Finding solutions to these questions requires consideration of information from a range of sources and the quality of the decision or policy response may link directly to the ability to source, relate and analyse the various data. Second, citizens are demonstrating a much stronger interest in being informed about the activities of their governments and there is evidence of a generally increased focus on the participation of citizens, and on the accountability of government, through the provision of information.[36]

The Committee recognises that the release of PSI will provide more opportunities for citizens to obtain information about the activities of government and the public sector. A number of submissions to the Inquiry argued that access to PSI is essential to democracy, facilitating greater participation in social and political activities and enhancing government transparency and accountability. Wellington Shire stated in its submission that "the confidence of the community in the public sector should be increased in the knowledge that information is available and is not being withheld."[37]

The Committee notes that transparency is a key component of President Obama's proposed *Open government directive*. In his memorandum, President Obama states that information maintained by the federal government is a national asset that should be disclosed in forms that the public can readily find and use. Consequently, citizens are kept informed about what their government is doing, which will promote accountability.[38]

2.2.4.1 Access to PSI under the Charter of Human Rights and Responsibilities Act 2006

In the discussion paper, the Committee noted that the *Charter of Human Rights and Responsibilities Act 2006* could be used in favour of the argument that people should have access to Victorian PSI. For example, section 15 of the *Charter of Human Rights and Responsibilities Act 2006* states:

> 15 Freedom of expression
>
> (1) Every person has the right to hold an opinion without interference.

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[35] Cyberspace Law and Policy Centre, *Submission*, no. 68, 5 September 2008, p. 11.
[36] Australian Bureau of Statistics, *Submission*, no. 63, 27 August 2008, pp. 1-2.
[37] Wellington Shire Council, *Submission*, no. 40, 19 August 2008, p. 3.
[38] President Obama, 'Transparency and open government', viewed 2 February 2009, <http://www.whitehouse.gov>.

> (2) Every person has the right to freedom of expression which includes the freedom to seek, receive and impart information and ideas of all kinds, whether within or outside Victoria and whether—
>
> (a) orally; or
>
> (b) in writing; or
>
> (c) in print; or
>
> (d) by way of art; or
>
> (e) in another medium chosen by him or her.[39]

The Committee noted that the Charter not only specifies the rights of people to *impart* information of all kinds, but also to *seek* and *receive* information. In this regard, it could be argued that the prerogative of the Victorian Government should be to provide information to the public freely, and withhold or restrict information only in specific cases where it is subject to any legislative, commercial, privacy or security provisions.

This is essentially the position the Committee recommends in this report, although the Committee is of the opinion that the 'freedom' of persons to access Victorian Government PSI does not necessarily mean *access without cost*. There may also be cases in which it is sufficient to offer re-use of Victorian Government PSI to the public under specific conditions, provided that those conditions are non-exclusive. This issue is discussed further in section 6.1.1.3.

2.2.4.2 Access to PSI as a means to improve democratic process

One of the principals of democracy is that citizens are empowered to choose who governs them, so that there needs to be sufficient information about governance of the state in order to make that choice. It can be argued that government has two key responsibilities toward its citizens:

- to ensure that all citizens possess the necessary skills to obtain information on, and form judgements about, government and government services; and

- to ensure that all citizens have knowledge of, and access to, information about government and government services.

In its discussion paper the Committee noted the argument that access to knowledge is a key driver of social and political development.[40] In the context of citizen participation, the acquisition of information and knowledge can equip citizens with skills to engage in the policy process.[41]

Professor Fiona Stanley, Director of the Telethon Institute for Child Health Research, cites a wide range of benefits to be obtained from increased access to PSI, including:

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[39] Charter of the Human Rights and Responsibilities Act 2006 (Vic).
[40] Economic Development and Infrastructure Committee, *Discussion paper - Inquiry into improving access to Victorian public sector information and data*, Parliament of Victoria, Melbourne, 2008.
[41] Fiona Stanley, 'Open access to PSI - the rationale', Paper presented at the *Australian national summit on open access to public sector information*, Brisbane, 2007.

- building modern democracies and civil societies (which respect human rights);
- empowering citizens by fostering greater accountability of governments;
- improved governance and a culture of accountability; and
- facilitating sustainable development and the identification of inequalities in society. [42]

Professor Stanley argues that access to PSI at no or marginal cost can contribute to a culture of government accountability.[43] Access to PSI, particularly datasets and administrative statistics such as those provided by the ABS, may provide citizens with resources to place pressure on governments to improve decision-making processes. In this way, the development of evidence-based solutions ensures the sequence of data to knowledge and then to government policy is transparent.[44] In contrast, restricting citizens from access to and use of PSI is argued to undermine the transparency of governance.

The Committee recognises potential social participation and transparency benefits from increased access to and re-use of PSI. The Committee is of the view, however, that the benefits to society as a whole through increased transparency will not occur through *every* citizen accessing and re-using PSI, but through individual citizens using and analysing PSI and making their analyses public, either as a public service or as entrepreneurs. For this reason, government transparency and social engagement will likely be best enhanced by making generally available information about what kind of PSI government holds, in addition to the implementation of a systematic approach to determining appropriate PSI for release.

2.3 The 'push' and 'pull' models for access to PSI

2.3.1 The right mix of models for access to PSI

In the Committee's discussion paper the contrasting approaches of 'push' and 'pull' models for access to PSI were introduced. These notions were discussed in an independent review of the Queensland Government's Freedom of Information (FoI) legislation published in 2008, *The right to information*. The 'push'/'pull' models present each end of the spectrum of information management practices, and in practice most governments' approaches to information dissemination lie between these two extremes.

The pull approach to information management is nevertheless dominant in Victoria, and indeed internationally. It is characterised by policies that allow for the release of information to individuals or organisations on request,

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[42] Fiona Stanley, 'Open access to PSI - the rationale', Paper presented at the *Australian national summit on open access to public sector information*, Brisbane, 2007.
[43] Fiona Stanley, 'Open access to PSI - the rationale', Paper presented at the *Australian national summit on open access to public sector information*, Brisbane, 2007.
[44] Fiona Stanley, 'Open access to PSI - the rationale', Paper presented at the *Australian national summit on open access to public sector information*, Brisbane, 2007.

provided access is not restricted for specific reasons (such as privacy or security). This approach is exemplified by arrangements under the *Freedom of Information Act 1982* in Victoria, where an application must be made for information which is subsequently released if there are no restrictions upon it. This model depends, at least in part, on the person requesting the information knowing that it exists in the first place. Information that is proactively released to the public domain by government under this model generally serves a specific policy objective – such as introducing or making a case for a particular program or government action.

The push model emphasises proactive publication of information by government. Under this model, government does not rely on requests for information, and instead identifies and publishes information proactively. As a consequence, the public may become aware of information and issues because government has made it available. This approach may reduce the workload on the public service associated with requests for information by pre-emptively publishing documents that may be of interest to the public.

A number of submissions noted the advantages and disadvantages of both approaches to the provision of PSI. Some witnesses noted that a blanket push approach to the provision of PSI could potentially be labour-intensive, and that an indiscriminate push approach could result in a lot of information being published that is never subsequently used.[45] On the other hand, other submissions suggested that publishing routine datasets could be inexpensively incorporated into existing processes, and that proactive publishing could satisfy requests that are not currently pursued due to costs associated with the pull model.[46] The push model was also perceived to comply with and promote the notion of government transparency.[47]

Evidence received by the Committee also noted problems identifying the existence of information under the pull model, and potential costs associated with processing requests for information. However, submissions also identified advantages with the pull model, including for example that costs associated with information provision can be recovered or offset, and that it meets specific demands and so is more efficient.[48]

Clearly there are merits to both models for the management of data, and the Committee recognises that both approaches are currently employed by the Victorian Government. There are, however, ways in which both approaches to information provision could be improved in Victoria. First, the Committee urges the Victorian Government to identify data and information that are of clear interest to the Victorian public, and are not

[45] Metropolitan Fire and Emergency Services Board, *Submission*, no. 30, 21 August 2008; Strathbogie Shire Council, *Submission*, no. 56, 20 August 2008; VicRoads, *Submission*, no. 58, 28 August 2008.
[46] Cyberspace Law and Policy Centre, *Submission*, no. 68, 5 September 2008; VicRoads, *Submission*, no. 58, 28 August 2008.
[47] Cyberspace Law and Policy Centre, *Submission*, no. 68, 5 September 2008; Liberty Victoria, *Submission*, no. 25, 20 August 2008.
[48] Metropolitan Fire and Emergency Services Board, *Submission*, no. 30, 21 August 2008; Strathbogie Shire Council, *Submission*, no. 56, 20 August 2008; VicRoads, *Submission*, no. 58, 28 August 2008.

subject to any legislative, commercial, privacy or security restrictions, and publish these proactively on department websites.

Second, the Committee recognises that for much information held by government, general public interest may be low, and even if there are no compelling reasons to restrict access to data or information, the cost of publishing all such materials may be prohibitive and inefficient. Nevertheless, as noted above, some of these may be of use for individual or commercial purposes – or even by other parts of the public sector – not anticipated by data custodians. For this reason it is imperative that the key flaw of the pull model for PSI – the fact that it is not clear what information and data exists – must be overcome. Consequently, the Committee urges the Victorian Government to implement and publish a searchable catalogue of information held by the public sector. These and other suggestions are outlined in more detail throughout this report.

Finding 3: Pull approaches to the provision of public sector information, where access to information is provided on request, are most effective when a comprehensive, searchable index of documents and materials held by government is made available to the public.

2.4 A Victorian Information Management Framework

To maximise the value of the Victorian Government's PSI, the Committee believes there is a strong case for the Government developing and implementing a comprehensive whole-of-government framework to manage its information and data. Drawing on evidence from the literature and that acquired during the course of this Inquiry, the Committee is of the view that open access to Government PSI should be the default position of the framework. The object of the framework should be to promote and facilitate access to and re-use of PSI by public and private sectors, and the community. The Committee believes that open access should be the default position because:

- PSI is publicly funded and is generated for the purpose of administering the state and undertaking core functions of governance. As a resource created on behalf of all citizens, PSI should be accessible to all citizens; and

- economic and social benefits arising from the release of the Victorian Government PSI will likely outweigh the benefits of treating it as a commodity.

The Committee is of the opinion that the focus of the open access policy should be on prospective PSI, rather than existing information and data. As part of the policy, the Victorian Government will also need to identify specific criteria that warrant restricting access to PSI.

The Committee proposes that the Victorian Government release a statement in support of open access as the default position for the management of its PSI. The Committee believes this will send a clear message to the community that the Victorian Government is committed to enhancing access to its PSI. Because the development of the framework will be complex, the public statement should precede release and implementation of the framework.

Recommendation 1: That the Victorian Government release a public statement indicating that it endorses open access as the default position for the management of its public sector information.

The Committee's strong preference is that the Government adopt an open access policy as its default position for access to and re-use of all PSI. It is apparent to the Committee, however, that should the Government decide not to implement this policy, consideration of a systematic strategy for the management of PSI has substantial merit. The development of digital technologies facilitates the distribution and generation of information. Digital technologies also provide opportunities for information and data to be categorised for later identification with less effort than has previously been the case. A consistently categorised directory of PSI for the Victorian Government could lead to huge efficiency gains within public administration, even when particular types of PSI are identified as not appropriate for release.

Throughout this report the Committee considers the range of complex issues that should be considered by the Victorian Government as it implements policy for the management of PSI. The Committee strongly believes that an overarching information management framework for the Victorian Government would be of substantial benefit, and accordingly makes the following, principle recommendation for this report.

Recommendation 2: That the Victorian Government develop a whole-of-government Information Management Framework (IMF) with the following key features:

- that the object of the IMF is to promote and facilitate increased access to and re-use of Victorian public sector information (PSI) by government, citizens, and businesses;
- that the default position of the IMF be that all PSI is made available;
- that the IMF define and describe criteria under which access to PSI may be restricted, or released under licence;
- that PSI made available under the IMF be priced at no cost or marginal cost; and
- that the IMF establish a systematic and consistent whole-of-government methodology for categorisation, storage and management of PSI .

The Committee intends that the proposed IMF should apply prospectively to Victorian Government PSI. The Committee expects that costs associated with implementation of the IMF will be minimised if its key processes are integrated into the design, creation, and storage of PSI from now on. The Committee is cognisant, however, that some agencies may wish to apply the framework to existing information and data, and is of the view that they should not be discouraged from doing so.

Recommendation 3: That the Victorian Government prospectively apply the Information Management Framework to its public sector information.

Chapter Three: Key points

- An important issue to consider in the context of this Inquiry is the range of agencies, and the types of information and data, that should be encompassed under the term ‘public sector information’ (PSI).

- Legislation may provide some guidance on how to interpret the extent of the ‘public sector’. Ultimately the range and type of agencies captured by the term public sector must be determined by the objectives of the Committee’s proposed Information Management Framework (IMF).

- For the purpose of introducing the IMF actions under the framework should initially apply only to Victorian Government departments.

- A staged approach for the extension of the IMF should be considered following the initial implementation across Victorian Government departments.

Chapter
3

Chapter Three: Defining the 'public sector' for the Information Management Framework

Prior to commencing development of the proposed Information Management Framework (IMF), it is important to identify which public sector agencies the framework will apply to. The Inquiry's Terms of Reference refer specifically to "Victorian Government information", and although the body of data and information held directly by the executive forms the core interest of this Inquiry, the Committee is cognisant of the extensive amount of information and data held by other public sector agencies that may also be of great interest and benefit to the wider community.

During the course of its investigations the Committee determined that current international debate about the issues raised in this Inquiry typically employs the term 'public sector information' (PSI) in discussions around improved access to government information. Consequently, the Committee resolved to adopt the term 'public sector' for the purposes of this Inquiry, and to examine whether a broad or narrow definition of PSI is appropriate for the purposes of developing the IMF.

Defining the range and extent of the public sector was one of the issues considered in the Committee's discussion paper, and so a number of key themes from that paper will be revisited in this Chapter. This includes a review of existing definitions from relevant pieces of Commonwealth and Victorian legislation, as well as drawing on definitions from international jurisdictions.

3.1 Existing definitions

3.1.1 Commonwealth legislation

In the discussion paper, the Committee considered the *Copyright Act 1968 (Cth)* an appropriate starting point for thinking about what comprises the public sector because of its special Crown copyright subsistence and ownership provisions.[49] While the Act does not offer a detailed definition of the 'Crown' other than to refer to it as the "Commonwealth and/or a State"[50], commentary about the application of the Act by the Copyright Law Review Committee (CLRC) has provoked examination of what comprises the Crown and the public sector more generally.

[49] Copyright Act 1968 (Cth).
[50] Copyright Act 1968 (Cth).

In its 2005 review of Crown copyright, the CLRC indicated that the entities to which the definition of the Crown applies are "somewhat uncertain."[51] The CLRC identified various interpretations of the Crown that are adopted in a range of contexts, from a broad definition that encompasses "the whole system of government, that is, the executive, legislative and judicial arms", to a narrower definition often favoured in legislation where the Crown refers only to the executive arm of government.[52] The CLRC did not offer a single definition for the Crown, and suggested that the meaning of the terms "Commonwealth" and "State" must be inferred from the context in which they are used.[53]

Uncertainty about the agencies and entities referred to by the term Crown extends to whether Crown copyright provisions apply to statutory corporations and authorities. On this issue, the CLRC noted:

> For bodies controlled by the government, funded by the government and existing for government purposes, the application of the Crown copyright provisions is reasonably straightforward. However, the extent to which the Copyright Act applies to statutory agencies, government-owned corporations and independent contractors is less clear. This uncertainty is compounded by the increasing tendency of governments to carry out their functions through a range of entities whose status is not defined in legislation.[54]

According to the Australian Copyright Council (ACC), statutory authorities may be part of the Commonwealth, States and Territories if the relevant parliament intended them to "enjoy the privileges of the Crown."[55] If this definition for the Crown is adopted, legal opinion would be required to determine the status of each statutory authority. In the context of this Inquiry, and given the uncertainty surrounding the extent of the Crown, the Committee does not believe that the Crown is a useful concept to apply when determining the entities to which the IMF should apply.

3.1.2 Victorian legislation

Looking beyond the concept of the Crown, four pieces of Victorian legislation provide some guidance on the extent of the public sector. The *Public Administration Act 2004 (Vic)* provides a framework for good governance in the Victorian public sector and in public administration generally in Victoria. In this Act, a "public sector body" is defined as:

a) a public service body – government departments, administrative offices, or the State Services Authority;

b) a public entity – established by government legislation to undertake a public purpose, including statutory authorities, state-owned

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[51] Copyright Law Review Committee, *Crown copyright*, Commonwealth of Australia, Canberra, 2005, p. 6.
[52] Copyright Law Review Committee, *Crown copyright*, Commonwealth of Australia, Canberra, 2005, p. 6.
[53] Copyright Law Review Committee, *Crown copyright*, Commonwealth of Australia, Canberra, 2005, p. 114.
[54] Copyright Law Review Committee, *Crown copyright*, Commonwealth of Australia, Canberra, 2005, p. 113.
[55] Australian Copyright Council, 'Information sheet: Governments (Commonwealth, State and Territory)', viewed 5 May 2008, <www.copyright.org.au>.

corporations, school councils, boards, trusts, and advisory committees;

c) a special body – a department of the Parliament of Victoria, the Electoral Boundaries Commission, the office of the Commissioner for Law Enforcement Data Security, the office of the Health Services Commissioner, the office of the Ombudsman, the office of Police Integrity, the office of the Privacy Commissioner, the State Coroner's Office, the Victorian Civil and Administrative Tribunal, the Auditor-General's Office, the Victorian Electoral Commission and Victoria Police.[56]

Parliamentary committees, local councils, universities and community health centres are exempt from this definition.

The second useful source for considering the extent of the public sector is the *Freedom of Information Act 1982*, particularly where it defines the types of agencies that must make information available for request under the Act. Agencies and organisations that must make information available for request include:

1. state government departments;
2. local councils;
3. most semi-government agencies and statutory authorities;
4. public hospitals and community health centres; and
5. universities, TAFE colleges and schools.[57]

Another legislative framework is the *Information Privacy Act 2000*, which defines the "Victorian public sector" in the context of the application of the Act. Section 9(1) states that the Act applies to:

a) a Minister;

b) a Parliamentary Secretary, including the Parliamentary Secretary of the Cabinet;

c) a public sector agency;

d) a Council;

e) a body established or appointed for a public purpose by or under an Act

f) a body established or appointed for a public purpose by the Governor in Council, or by a Minister, otherwise than under an Act;

g) a person holding an office or position established by or under an Act (other than the office of member of the Parliament of Victoria)

[56] Public Administration Act 2004 (Vic).
[57] Freedom of Information Act 1982 (Vic).

or to which he or she was appointed by the Governor in Council, or by a Minister, otherwise than under an Act;

h) a court or tribunal;

i) the police force of Victoria;

j) a contracted service provider, but only in relation to its provision of services under a State contract which contains a provision of a kind referred to in section 17(2);

k) any other body that is declared, or to the extent that it is declared, by an Order under subsection (2)(a) to be an organisation for the purposes of this subsection –

l) excluding any person or body that is a Commonwealth-regulated organisation or declared, or to the extent that it is declared, by an Order under subsection (2)(b) not to be an organisation for the purposes of the relevant paragraph of this subsection.[58]

Finally, the *Charter of Human Rights and Responsibilities Act 2006 (Vic)* defines "public authorities" to which the Act applies, referring to and extending the definition of public officials under the *Public Administration Act 2004 (Vic)*:

a) a public official within the meaning of the *Public Administration Act 2004 (Vic)*; or

b) an entity established by a statutory provision that has functions of a public nature; or

c) an entity whose functions are or include functions of a public nature, when it is exercising those functions on behalf of the State or a public authority (whether under contract or otherwise); or

d) Victoria Police; or

e) a Council within the meaning of the *Local Government Act 1989 (Vic)* and Councillors and members of Council staff within the meaning of that Act; or

f) a Minister; or

g) members of a Parliamentary Committee when the Committee is acting in an administrative capacity; or

h) an entity declared by the regulations to be a public authority for the purposes of this Charter.[59]

Under the *Charter of Human Rights and Responsibilities Act 2006 (Vic)*, the following are not regarded as public authorities:

[58] Information Privacy Act 2000 (Vic).
[59] Charter of the Human Rights and Responsibilities Act 2006 (Vic).

a) Parliament or a person exercising functions in connection with proceedings in Parliament; or

b) a court or tribunal except when it is acting in an administrative capacity; or

c) an entity declared by the regulations not to be a public authority for the purposes of this Charter.[60]

In its review of statutory definitions of the public sector, the Committee was mindful that existing legislation has been developed for purposes other than making information and data available for re-use. As such, the definitions provided in those statutes for what comprises the public sector are directed toward the purposes of the particular Act. The *Information Privacy Act 2000* is directed at ensuring appropriate access to information about people. The *Freedom of Information Act 1982* is also directed at providing appropriate access to information, rather than providing for the re-use of that information. The *Charter of Human Rights and Responsibilities Act 2006* suggests that people living in Victoria should be able to re-use information, but is not explicit in this regard.

The Committee sought clarification through its discussion paper on what an appropriate definition or extent for the public sector should be. Opinions from stakeholders regarding definitions of the public sector are discussed below.

3.1.3 International legislation

Internationally, the European Commission's *Directive on the re-use of PSI* has been a significant driver for facilitating improved access to and re-use of PSI throughout the European Union (EU). The Directive outlines a minimum set of rules governing the re-use of documents held by public sector bodies within EU Member States. The Directive defines a public sector body as:

> …the State, regional or local authorities, bodies governed by public law and associations formed by one or several such authorities or one or several such bodies governed by public law.[61]

The definition excludes cultural establishments, education and research communities and public service broadcasters.

In its review of the application of the PSI Directive, the European Commission called for feedback on whether excluded sectors should be brought within the remit of the Directive. The Commission stated:

> The wide majority of European cultural establishments, education and research organisations and public service broadcasters hold amongst their collections a considerable amount of valuable material. These institutions have a mandate in the wide dissemination and preservation of their content to realise various social (cultural/educational) and economic goals,

[60] Charter of the Human Rights and Responsibilities Act 2006 (Vic).
[61] European Commission, 'Directive 2003/98/EC of the European Parliament and of the Council of 17 November 2003 on the re-use of public sector information', *Official Journal of the European Union*, 2003, p. 93.

> and are also interested in the potential commercial and non commercial re-use of this material. These institutions have embarked themselves in major digitisation efforts in order to achieve the above mentioned goals and make full use of the opportunities the new digital environment offers.[62]

In response, a number of stakeholders expressed support for extending the definition of the public sector to further develop Europe's information and content market.[63] Other stakeholders, particularly those representing the views of the excluded sectors, spoke against an extension. These stakeholders expressed concern about the high administrative burden they would incur, and argued that they would not be able to release most of the content they hold due to third party copyright.[64] Consequently, the European Commission resolved to continue to exclude these institutions from the definition of public sector body, but stated that they should aim to abide by the principles and spirit of the Directive.[65]

3.2 Adopting a broad or narrow approach

Submissions to the Inquiry argued for a range of definitions for what comprises the 'public sector'.[66] Of these, four submissions supported the inclusion of:

- executive government: principally government departments, but also incorporating statutory authorities;
- the legislature, including parliament;
- the judiciary;
- local councils; and
- other public institutions, such as universities, TAFEs, public hospitals, etc.[67]

The Intellectual Property Research Institute of Australia (IPRIA) advised that while there is no reason why these agencies should be excluded,

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[62] European Commission, 'Public consultation: Review of the PSI Directive', viewed 9 December 2008, <http://ec.europa.eu>.
[63] European Commission, 'Results of the online consultation of stakeholders ', viewed 9 December 2008, <http://ec.europa.eu>.
[64] European Commission, 'Results of the online consultation of stakeholders ', viewed 9 December 2008, <http://ec.europa.eu>.
[65] European Commission, 'Results of the online consultation of stakeholders ', viewed 9 December 2008, <http://ec.europa.eu>.
[66] City of Melbourne, *Submission*, no. 26, 19 August 2008; Creative Contingencies, *Submission*, no. 70, 5 September 2008; Cyberspace Law and Policy Centre, *Submission*, no. 68, 5 September 2008; Deakin University, *Submission*, no. 36, 22 August 2008; Intellectual Property Research Institute of Australia, *Submission*, no. 57, 29 August 2008; La Trobe University, *Submission*, no. 49, 22 August 2008; Liberty Victoria, *Submission*, no. 25, 20 August 2008; Monash University, *Submission*, no. 69, 5 September 2008; Open Source Geospatial Foundation Aust-NZ, *Submission*, no. 33, 2 August 2008; RP Data Ltd, *Submission*, no. 39, 22 August 2008; University of Melbourne, *Submission*, no. 34, 22 August 2008; VicRoads, *Submission*, no. 58, 28 August 2008; Wellington Shire Council, *Submission*, no. 40, 19 August 2008.
[67] Cyberspace Law and Policy Centre, *Submission*, no. 68, 5 September 2008; Intellectual Property Research Institute of Australia, *Submission*, no. 57, 29 August 2008; VicRoads, *Submission*, no. 58, 28 August 2008; Wellington Shire Council, *Submission*, no. 40, 19 August 2008.

special provision should be made for commercial units within these agencies.[68]

Other submissions questioned whether it was appropriate to consider particular agencies, such as educational institutions, within the scope of the public sector. For example, Deakin University, Monash University, La Trobe University and the University of Melbourne did not support the inclusion of universities for the following reasons:

- they are better viewed as non-profit organisations that are engaged in publishing information, and have obligations to researchers, students and partner organisations;
- their commercial-in-confidence should be protected in circumstances when they participate in commercial activities;
- they are reliant on revenue from a variety of sources; and
- the information they produce, while having strong links to the public sector and public good, is not directly associated with the functioning of government.[69]

Drawing on the definitions identified in the *Public Sector Administration Act 2004,* the *Freedom of Information Act 1982,* the *Information Privacy Act 2000*, and the *Charter of Human Rights and Responsibilities Act 2006* it is clear that adopting a broad definition of public sector would mean that the IMF would apply to a substantial number of diverse agencies. However, challenges associated with implementing any overarching policy for such a range of agencies would be substantial, and potentially prohibitive.

As noted above, the Committee is cognisant that existing Victorian statutes are directed toward different purposes than the current Inquiry. The *Freedom of Information Act 1982,* the *Information Privacy Act 2000*, and the *Charter of Human Rights and Responsibilities Act 2006* support the principle of controlled ***access*** to information – either because the information pertains to individuals and their right to have access to it, and to restrict general access to individual information by others; or because the information should be released to facilitate transparency in the operation of the public sector. Arguments supporting ***re-use*** of all PSI are less clear cut. For this reason, the Committee believes the case for government requiring or mandating the re-use of information beyond its departments is not strong.

Finally, through the course of this inquiry the Committee received some information on revenue raised through the sale of PSI by statutory authorities and statutory corporations in Victoria. This evidence indicated that, at least in some cases, the reliance of these agencies on revenue obtained from PSI may be substantial. For example, VicRoads indicated in

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[68] Intellectual Property Research Institute of Australia, *Submission*, no. 57, 29 August 2008, p. 4.

[69] Deakin University, *Submission*, no. 36, 22 August 2008; Latrobe City Council, *Submission*, no. 18, 12 August 2008; Monash University, *Submission*, no. 69, 5 September 2008; University of Melbourne, *Submission*, no. 34, 22 August 2008.

its submission to the Inquiry that of the $34.6 million it received in revenue, $7.6 million was obtained from the sale of PSI and data fees.

Consequently the Committee proposes a narrow definition for the public sector comprising only departments of the Victorian Government for the purpose of implementing the IMF. The IMF applying to Victorian Government departments could later be expanded to include other entities and agencies, should the framework prove successful. The Committee believes that this approach is necessary to secure the long-term sustainability of and support for the framework across the Victorian Government.

Recommendation 4: That the Victorian Government adopt a narrow definition for the public sector for the purpose of establishing the government Information Management Framework. Initially this definition should comprise only Victorian Government departments.

In recognition of the extensive amount of valuable information and data held by public sector agencies not encompassed by Recommendation 4, the Committee believes it is important that the Victorian Government encourage these agencies to establish similar IMFs. All agencies should be directly involved in the development of their own IMFs to ensure their business needs and information environments are accommodated. The Committee recognises that for some public sector agencies, such as VicRoads (a statutory corporation), business requirements will substantially influence the development of an appropriate framework.

The broader implementation of these frameworks should be conducted in a staged approach, drawing upon the experiences of Victorian Government departments to inform design and implementation. Entities and agencies that may consider adopting a framework include the Parliament of Victoria, the judicial system and statutory authorities. Over time, a broad range of public sector agencies, such as public hospitals and local councils, should be encouraged to implement an information management framework.

The Committee is also aware that some public sector agencies and entities may wish to follow the Government's lead to implement an information management framework as 'early adopters'. Following implementation of its own IMF, the Victorian Government should support and encourage agencies that wish to develop IMFs.

Recommendation 5: That implementation of the Information Management Framework be conducted via a staged approach, with the executive branch of the Victorian Government leading development of the framework, and encouraging other agencies and entities to adopt similar frameworks, in the following order:

- Victorian Government;
- Parliament of Victoria, the judicial system and statutory authorities; and
- other public sector agencies, including public hospitals and local councils.

Chapter Four: Key points

- A critical consideration prior to the release of any public sector information (PSI) is that it be conducted in accordance with statutory requirements, as provided for under key legislation such as the *Information Privacy Act 2000*, the *Freedom of Information Act 1982*, and the *Charter of Human Rights and Responsibilities Act 2006*.

- In the Committee's view, "personal information", as defined under the *Information Privacy Act 2000*, provides appropriate criteria for determining PSI that should not be released under the Information Management Framework due to privacy restrictions.

- Security restrictions and existing contractual or funding agreements provide sufficient grounds for restricting access and re-use of Victorian Government PSI.

- Criteria for restricting access to Victorian PSI should include guidance for refusing access to incomplete or unfinished PSI.

- A key consideration for Government will be ensuring it has appropriate indemnity when releasing PSI for re-use.

Chapter
4

Chapter Four:
Criteria for determining the release of public sector information

The Inquiry's Terms of Reference require the Committee to consider "the types of information that will provide the greatest potential benefit" if more government information is made available for re-use.[70] While the Committee indicated in its discussion paper that one of its core tasks is to determine the kinds of information and data that should be made available under an open content licensing model, it became clear during the course of this Inquiry that a prescriptive approach to the provision of information has a number of weaknesses. These include that it would be difficult to prescribe and capture the breadth of public sector information (PSI) that could potentially be of use to citizens and businesses, and that the dynamic and changing nature of information and data would almost certainly render any prescriptive policy redundant over time.

Nevertheless, during the Inquiry, the Committee observed strong support for improved access to a variety of government-owned materials, if not the majority of government-owned materials. For example, the Cyberspace Law and Policy Centre (CLPC) made the following recommendation in its submission to the Inquiry:

> ...the Victorian Government adopt an approach where the community is given access to as much information in completed form as it is practicable to supply, and in as high a quality to facilitate re-use as is practicable.[71]

Spatial information, publicly funded research and educational resources were cited by some stakeholders as particularly suited for release. These were regarded as providing clear social and economic benefits if publicly and freely accessible. These and other categories of PSI are discussed in Chapter Five.

While these categories of PSI may stimulate the most immediate interest, government is unlikely to anticipate the range of applications, and the types of PSI, that will be most valuable to business and the public. This is why the Committee recommended in Chapter Two that the default position of the Government be that all PSI be available for release, with criteria developed to ensure that inappropriate release of PSI does not occur.

4.1 Identifying PSI for release

A diverse and extensive range of materials are owned by the Victorian Government. The Committee recognises that a large amount of this

[70] See Inquiry Terms of Reference on page xiii of this report, section a) iii
[71] Cyberspace Law and Policy Centre, *Submission*, no. 68, 5 September 2008, p. 11.

information and data is already publicly available. However, the Committee believes the Victorian Government should encourage departments to actively identify materials to publish proactively on their web sites.

In its review of Crown copyright, the Copyright Law Review Committee (CLRC) provided an example of a decision-making process that distinguished between types of information based on the level of public interest in their dissemination. The breakdown included:

- materials where there is a clear public interest in providing the widest possible dissemination, including primary legal materials. In addition, many other government materials are produced to encourage public discussion and education, promote community standards and facilitate public access to government services;

- materials, such as historical material, where the public interest in dissemination is not as strong; and

- unpublished materials, such as submissions to ministers and particular databases.[72]

The CLRC indicated, however, that this public interest test received limited support from government stakeholders. Many stakeholders advocated for greater consideration of different government functions and potential implications following the release of different types of material, as opposed to making broad policy determinations.[73]

In its submission, the University of Melbourne proposed the development of a set of criteria to assist the selection and prioritisation of PSI for release. It proposed the following criteria:

- no disadvantage – existing agreements with external parties to continue until the original scheduled review point;

- public benefit – higher priority given to information of benefit to many and lower priority given to information of benefit to a smaller audience;

- risk assessment – identify any immediate risk to health, security, privacy or other human rights, and seek to mitigate those risks;

- appropriateness to audience – release of specialised data may not be helpful to public understanding of a complex issue so aggregation, summarising or interpretation may be required;

- vested interests – if public and private investment contributed to the creation of information, what are the stakeholders' expectations around gaining a return on that investment? Will

[72] Copyright Law Review Committee, *Crown copyright*, Commonwealth of Australia, Canberra, 2005, pp. 36-37.
[73] Copyright Law Review Committee, *Crown copyright*, Commonwealth of Australia, Canberra, 2005, p. 37.

publication of the information disclose a not-yet-patented invention, which the inventor intends to claim?;

- ease of publication – can the information be automatically published and updated periodically?;

- source and quality of information – determine who created the information and with what resources; the level of confidence in the accuracy, provenance and integrity of the information; and if there are any barriers relating to IP ownership or copyright:

- stewardship – clear assignment of accountability to authorise initial release of the information, ongoing management of the information and evaluate the value of its release; and

- cost of initial publication, and of sustaining public access – availability of ongoing funding for data collation and formatting, management and infrastructure.[74]

While the Committee agrees that some of these issues should be considered by the Victorian Government prior to the release of PSI, it does not believe that priority should be given to the criteria focussing on public benefit and appropriateness to audience. The Committee understands the rationale for these criteria, however, as stated previously the Committee believes the value of PSI will be enhanced if it is released without public servants or data custodians attempting to anticipate for whom or how it may benefit.

The Committee recognises the value of the Victorian Government adopting a systematic approach to prospectively identify materials for release and publishing. The development of a series of questions or a flowchart will assist this process, and will also help departments continue to apply the policy in the future.

Individual departments should be responsible for identifying PSI for release and publishing materials. The Committee believes this process would be best done while data custodians are establishing metadata records for their materials. For this reason, criteria for determining whether PSI should be proactively published should be developed along with guidance materials for the entry of metadata. The concepts of custodians and metadata are discussed further in Chapter Eight.

Recommendation 6: That the Victorian Government, through individual departments, employ a systematic approach to identify materials for release and publish those materials on department websites.

4.2 Identifying PSI with restricted access

In Chapter Two, the Committee recommended that the Victorian Government develop an Information Management Framework (IMF) to "promote and facilitate increased access to and re-use of Victorian public

[74] University of Melbourne, *Submission*, no. 34, 22 August 2008, p. 7.

sector information by government, citizens, and businesses", and that the default position of the IMF be open access.

While the Committee regards the default position of open access as the best approach, there are a number of valid reasons for restricting general access to government-owned information. These include restricting access on grounds of privacy and confidentiality (often regulated under specific legislative frameworks), other statutory requirements, third party/contractual obligations and in order to preserve commercial confidentiality. These are outlined in further detail below.

4.2.1 Privacy restrictions on access to PSI

One of the most important reasons for restricting access to information and data is to preserve a person's right to privacy. Privacy legislation has been enacted in Australian jurisdictions in order to protect information about individuals from arbitrary disclosure, and to give people some control over how information about them is collected, used and disclosed. The objectives of the Victorian *Information Privacy Act 2000* are to:

1. balance the public interest in the free flow of information with the public interest in respecting privacy and protecting personal information in the public sector; and

2. promote the responsible and transparent handling of the personal information in the public sector and promote awareness of these practices.[75]

A number of submissions acknowledged the need to prevent disclosure of identifying information and data about individuals or groups of individuals in order to protect against potential misuse of data.[76] The Committee agrees that this is critical, and that in all cases the rights to privacy of individuals should be preserved in accordance with relevant legislation, including the *Privacy Act 2000*, the *Freedom of Information Act 1983*, and the *Charter of Human Rights and Responsibilities Act 2006*.

The Committee does not intend, or recommend, that any of these statutes be amended. In implementing measures for the release of PSI, the Committee would expect that, as with all other actions by the Victorian Government, careful attention will be paid to legislative requirements for the maintenance of privacy and confidentiality. In practice, this may mean that certain information or datasets will not be released, although the Committee anticipates that in many cases identifying information may be removed from the information, and subsequently be released.

4.2.1.1 The Information Privacy Act 2000

As noted above, a number of pieces of Victorian legislation provide for the protection of privacy. Each of these Acts, and instruments associated with

[75] Information Privacy Act 2000 (Vic).
[76] Australian Bureau of Statistics, *Submission*, no. 63, 27 August 2008; Baw Baw Shire Council, *Submission*, no. 11, 13 August 2008; Health Services Commissioner, *Submission*, no. 35, 26 August 2008; Liberty Victoria, *Submission*, no. 25, 20 August 2008; Mornington Peninsula Shire, *Submission*, no. 12, 7 August 2008; Office of Spatial Data Management, *Submission*, no. 24, 20 August 2008; Privacy Victoria, *Submission*, no. 45, 22 August 2008.

them, consider aspects of privacy that must be preserved, and under what conditions. In the *Information Privacy Act 2000*, personal information is defined as:

> Information or an opinion (including information or an opinion forming part of a database), that is recorded in any form and whether true or not, about an individual whose identity is apparent, or can reasonably be ascertained, from the information or opinion, but does not include information of a kind to which the Health Records Act 2001 applies.[77]

Under the Act therefore de-identification of information or data occurs when the identity of an individual is not apparent, and cannot reasonably be ascertained. In many cases PSI could be released providing that all personal information is removed. To take a simple hypothetical example, a database containing people's names, street address, postcode and income could be released if the names and street addresses were removed – provided of course that none of the remaining variables were so unique (of a "singular nature") that a person could be identified because they are the only person to whom the data applies. In its submission to the Inquiry, Privacy Victoria noted that privacy laws do not preclude the re-use of data and information held by the public sector, provided that identifying information is removed prior to release.[78]

If PSI is to be released to the public, either proactively or following a specific request, the custodian of that PSI must ensure that personal information is excluded. For this reason, the release of PSI should preferably be facilitated by the public servants who created or developed that information, as they will be best placed to determine not only whether any explicitly identifying information is contained in the PSI, but also whether any information of a singular nature exists in it. If considerable resources are required to prepare data for release, it is reasonable that marginal costs of release (such as labour costs involved in 'cleaning' a database) be charged to the PSI recipient. Pricing issues are considered in Chapter Seven.

4.2.1.2 The Freedom of information Act 1982

The establishment of Freedom of Information (FoI) laws throughout Australia represented a shift from a closed to a more open system of government. These laws provide guidance on some types of PSI that should have restricted access. Under the Victorian *FoI Act 1982*, information not available for release includes documents that:

- affect the personal affairs of another person;
- are commercial-in-confidence;
- would undermine law enforcement; or
- contain information supplied in confidence.[79]

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[77] Information Privacy Act 2000 (Vic).
[78] Privacy Victoria, *Submission*, no. 45, 22 August 2008.
[79] Freedom of Information, 'Frequently asked questions', viewed 21 May 2008, <http://www.foi.vic.gov.au/>.

Specifically, this includes:

- cabinet documents;
- some internal working documents;
- law enforcement documents;
- documents covered by legal professional privilege, such as legal advice;
- documents containing personal information about other people;
- documents containing information provided to an agency in confidence;
- documents containing information provided to an agency by a business; and
- documents that are covered by other secrecy provisions in other legislation.[80]

According to the 2008 Victorian FoI annual report, only 2.4 per cent of FoI requests were denied. Most of these decisions cited the personal affairs exemption, followed by exemptions presented on grounds that the requested documents were internal working documents, or related to law enforcement.[81]

In its submission to the Inquiry, Privacy Victoria made reference to a discrepancy between the meaning of the term "personal affairs" as defined in the *FoI Act 1982* and the meaning of "personal information" as defined in the *Information Privacy Act 2000*. In the FoI Act, information relating to the personal affairs of a person includes information:

- that identifies any person or discloses their address or location; or
- from which any person's identity, address or location can reasonably be determined.[82]

Privacy Victoria stated that the meaning of personal affairs is narrower than the meaning of personal information, and as a consequence, offers less protection.[83] While an amendment was included in the *Freedom of Information Act Amendment Bill 2007* to replace the term personal affairs with personal information, the Bill was not passed by Parliament. In any case, the Committee affirms that with regard to the release of PSI except under the FoI Act, it is appropriate that a conservative approach be taken to the protection of privacy, and that as a consequence any information or data that meets the personal information threshold as defined under the *Information Privacy Act 2000* not be released.

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[80] Freedom of Information Act 1982 (Vic).
[81] Attorney-General of Victoria, *Freedom of information: Annual report by the Attorney-General of Victoria*, State of Victoria, Melbourne, 2008, p. 4.
[82] Freedom of Information Act 1982 (Vic).
[83] Privacy Victoria, *Submission*, no. 45, 22 August 2008, p. 7.

Finding 4: That "personal information", as defined under the *Information Privacy Act 2000*, provides appropriate criteria for determining public sector information that should not be released under the Information Management Framework due to privacy restrictions.

4.2.1.3 The Charter of Human Rights and Responsibilities Act 2006

Under the *Charter*, every person has the right: a) not to have his or her privacy, family, home or correspondence unlawfully or arbitrarily interfered with; and b) not to have his or her reputation unlawfully attacked.[84] While this legislation provides further cause for protection of privacy to feature prominently when considering eligibility of PSI for release, the Committee notes that the restriction on the release of personal information as described in the *Information Privacy Act 2000* provides sufficient protection to encompass the right to privacy as described by the *Charter*.

4.2.2 Secrecy provisions

Another avenue for restricting access to PSI is through secrecy provisions, many of which are regulated under legislation. Secrecy provisions prevent the unauthorised disclosure of defence or security information, and protect information about law enforcement agencies. The Committee recognises the strong desire for governments to prevent public release of this information, particularly when misuse could compromise the safety and security of citizens, or the state.

Debate about the benefits and costs of PSI release is currently being addressed in the Australian Law Reform Commission's (ARLC) review of secrecy laws. On 5 August 2008, the Attorney-General of Australia, the Honourable Robert McClelland MP requested that the ALRC conduct an inquiry into "options for ensuring a consistent approach across government to the protection of Commonwealth information, balanced against the need to maintain an open and accountable government through providing appropriate access to information."[85] The ALRC released an issues paper *Review of secrecy laws* in December 2008 to seek comments on the direction that the reforms should be considered. The ALRC is scheduled to report to the Australian Parliament in October 2009.

The Committee expects PSI access policies will contain appropriate secrecy provisions. Clearly, secrecy considerations satisfy criteria for restriction of access to PSI under an IMF.

4.2.3 Existing contractual or funding arrangements

A proportion of the PSI held by the Victorian Government is subject to specific contractual arrangements, and this should be considered when assessing PSI for access and/or re-use. The Victorian Government's submission to the Inquiry suggested that some departments obtain revenue from existing contracts, and the Committee expects that there will be restraints on departments in such arrangements from releasing

[84] Charter of the Human Rights and Responsibilities Act 2006 (Vic), section s13(a)-s13(b).
[85] Australian Law Reform Commission, *Review of secrecy laws*, Commonwealth of Australia, Canberra, 2008, p. 15.

associated PSI. Issues surrounding revenue currently obtained from the Victorian Government from PSI are discussed in Chapter Seven.

4.2.4 Incomplete information or datasets

While the Committee believes that access should be granted to most PSI, this should not extend to information and data that is currently under development or is incomplete. Such information and data may contain errors, or undeveloped observation and opinions, and as such may prove counterproductive to the public good if released and misinterpreted by individuals or organisations outside government. As noted in Chapter Eight, data custodians should indicate on the metadata records for their respective materials whether the information or data in question is in completed form.

4.3 Indemnity issues

Wider provision of PSI by the Victorian Government will likely result in instances where errors in information or data, or unintended disclosure, leads to non-government users of PSI or third parties considering legal action against the Government. The Victorian Government will need to ensure that it is indemnified to the maximum extent possible against this kind of action, and that its indemnity provisions are clearly communicated to PSI users and custodians. In particular, the Victorian Government will need to ensure that public servants are personally indemnified from action arising from the release of PSI, so that they are able to retain confidence in their role as data custodians.

In cases where PSI is currently released to the public, jurisdictions have tended to satisfy their duty of care through disclaimer statements. The website of the Bureau of Meteorology, for example, has a footer stating that "[u]sers of these web pages are deemed to have read and accepted the conditions described in the Copyright, Disclaimer, and Privacy statements." The Bureau's disclaimer states:

> Disclaimer
>
> You accept all risks and responsibility for losses, damages, costs and other consequences resulting directly or indirectly from using this site and any information or material available from it.
>
> To the maximum permitted by law, the Bureau of Meteorology excludes all liability to any person arising directly or indirectly from using this site and any information or material available from it.
>
> Always Check the Information
>
> Information at this site:
>
> - is general information provided as part of the Bureau of Meteorology's statutory role in the dissemination of information relating to meteorology, or in accordance with its role under the Water Act 2007;
> - may be provided by third parties (through agreements with the Bureau or in fulfilling their obligations under the Water Act and/or its associated regulations);
> - is subject to the uncertainties of scientific and technical research;

> - may not be accurate, current or complete;
> - is subject to change without notice;
> - is not a substitute for independent professional advice and users should obtain any appropriate professional advice relevant to their particular circumstances;
> - the material on this web site may include the views or recommendations of third parties, which do not necessarily reflect the views of the Bureau of Meteorology or indicate its commitment to a particular course of action.[86]

Similar disclaimers are contained in Creative Commons licences, which contain the following text:

> 5. Disclaimer.
>
> Except as expressly stated in this licence or otherwise mutually agreed to by the parties in writing, and to the full extent permitted by applicable law, licensor offers the work "as-is" and makes no representations, warranties or conditions of any kind concerning the work, express, implied, statutory or otherwise, including, without limitation, any representations, warranties or conditions regarding the contents or accuracy of the work, or of title, merchantability, fitness for a particular purpose, noninfringement, the absence of latent or other defects, or the presence or absence of errors, whether or not discoverable.[87]

For most, if not all, of the PSI released by the Victorian Government under the proposed IMF, liability will most likely arise through accusations of negligence in the provision of information. To succeed in a claim for negligence, a plaintiff would have to prove that:

- the Government owed the plaintiff a duty of care during the release of the PSI;
- the Government had breached that duty of care by negligent conduct; and
- the Government's breach caused the plaintiff actual damage which is not too remote from the breach.[88]

The Committee anticipates that provided sufficient disclaimers accompany the release of PSI, opportunities for Government to incur legal liability will be limited. Such disclaimers already accompany public release of Government information and data.

However, it is critical that the Victorian Government seek clarity on this issue when implementing the IMF. For this reason, the Committee recommends that the Victorian Government seek legal advice to obtain clarity on appropriate measures to indemnify the release of public sector

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[86] Bureau of Meteorology, 'Disclaimer', viewed 22 May 2009, <www.bom.gov.au>.
[87] Creative Commons Australia, 'Creative Commons licences', viewed 9 May 2008, <http://www.creativecommons.org.au>.
[88] Pam Stewart and Anita Stuhmcke, *Australian principles of tort law*, The Federation Press, Sydney, 2009, p. 135.

information. The Government should ensure it is fully covered against a range of legal actions that may arise from the release of PSI for re-use.

Recommendation 7: That the Victorian Government seek legal advice to ensure it is fully covered for all areas of possible legal action that may arise from the release of public sector information.

Chapter Five: Key points

- A diverse range of materials are held by government, including items such as acts, bills and regulations, computer software, databases in print and electronic form, films and audio-visual presentations, industry standards and codes, photographs, and statistics.

- Spatial information, publicly funded research and educational resources were regarded by a number of stakeholders as particularly suited to release under strategies for improved access to public sector information (PSI).

- There is substantial potential for spatial data held by the public sector to contribute to new commercial and public services and research. There are also significant opportunities for access to spatial data held as PSI to be improved.

- Improved access to public sector research through greater and more open publication of research results may encourage collaboration and collective learning, and may increase the efficiency of government investment in Research and Development (R&D) through reducing duplication of research.

- There are also opportunities for the Victorian Government to contribute to the development of research by making research produced by or funded by Government more widely available under open content licences.

- The Victorian Government produces a variety of educational resources for the education system, which are widely disseminated to schools, TAFES and universities. In the primary and secondary schools sector, the extensive use of these resources can be limited, however, as a consequence of the costs associated with copying and communicating the resources.

Chapter 5

Chapter Five: Issues surrounding selected public sector information

While the Committee has indicated that all types of public sector information (PSI) have the potential to produce economic and social benefits through increased access and re-use, the Committee notes that selected types of PSI are already widely used in commercial and other applications outside government. Specific issues surrounding selected PSI are discussed below.

5.1 Spatial information

Government is typically the primary generator and collector of spatial data. Furthermore, evidence received by the Committee suggests that the vast majority – around 80 per cent – of government-owned data has a spatial component.[89] Government use of spatial data is principally in the fields of geoscience, bathymetry,[90] bio-security, emergency management, defence, environmental and natural resources management, development approvals and public administration.[91] Outside government, there are few sectors of the economy that do not use spatial data technologies. Key uses for spatial data are in agriculture, forestry, fisheries, mining and resources, property and services, construction, transport, utilities and communication industries.[92]

The contribution of spatial data to the Australian economy through services and efficiency gains associated with spatial technologies is considerable. The report *The value of spatial information: the impact of modern spatial information technologies on the Australian economy* estimated that in 2006-07 spatial information and technologies contributed between $6.4 and $12.5 billion to gross domestic product (GDP).[93] The Victorian-based spatial information industry makes a significant contribution to the Victorian economy, comprising 223 spatial information businesses with total revenue of $410 million in 2008.[94]

At the Commonwealth level, the Office of Spatial Data Management (OSDM) coordinates spatial data management across Australian Government agencies. One of its core responsibilities is to facilitate implementation of the *Policy on spatial data access and pricing*, developed

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[89] Office of Spatial Data Management, *Submission*, no. 24, 20 August 2008, p. 5.
[90] Bathymetry is the science of measuring the depths of oceans, seas, etc, and topographic maps of the sea floor resulting from such measurements
[91] ACIL Tasman, *The value of spatial information*, Canberra, 2008, p. 3.
[92] ACIL Tasman, *The value of spatial information*, Canberra, 2008.
[93] ACIL Tasman, *The value of spatial information*, Canberra, 2008, p. x.
[94] Victorian Spatial Council, *Victorian spatial information strategy*, Department of Sustainability and Environment, Melbourne, 2008, p. 15.

in 2001 in response to the Productivity Commission's inquiry into *Cost recovery by government agencies*.[95] According to the OSDM, the policy is based on the premise that spatial data is an asset, and if accessible, can deliver economic and social benefits far exceeding the direct financial returns of cost recovery.[96]

At the state level, the Victorian spatial information industry is governed by a robust policy framework, key elements of which include the Victorian Spatial Council (VSC) and the Spatial Information Management Framework. The VSC was established in 2004 and is a collaborative venture of the spatial information community providing a coordinated approach to spatial information policy and management. The Council is represented by members from all sectors, including government, industry and academia.[97]

The Spatial Information Management Framework was first articulated in the *Victorian Geospatial Information Strategy 2000-03*. The objective of the Framework is to make spatial data accessible. A holistic approach has been adopted to achieve this objective, comprising:

1. institutional arrangements for developing spatial data – governance, custodianship;

2. requirements for creating and maintaining spatial data – framework and business information, data quality;

3. mechanisms for making spatial data accessible and available – metadata, awareness, access, pricing and licensing, and privacy; and

4. strategic development of technology and applications.[98]

In April 2008, the VSC released the *Victorian Spatial Information Strategy 2008-2010*. The Strategy anticipates the emerging social and economic environment for spatial data and proposes broad themes of action to facilitate participation of Victoria's spatial information community in the future market.[99] In the Strategy, the VSC argues that maintaining high standards in spatial information management is crucial to ensure that actions identified in the Strategy are underpinned by robust data and practice. The foundations for achieving this goal include:

- ensuring data is fit for purpose;

- licensing models that facilitate access and opportunities for new development;

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[95] Productivity Commission, *Cost recovery by Government*, Commonwealth of Australia, Canberra, 2001.
[96] Office of Spatial Data Management, *Submission*, no. 24, 20 August 2008, p. 3.
[97] Olaf Hedberg, Independent Chair, Victorian Spatial Council, *Transcript of evidence*, Melbourne, 27 October 2008, p. 2.
[98] Victorian Spatial Council, *Submission*, no. 41, 22 August 2008, p. 6.
[99] Victorian Spatial Council, *Victorian spatial information strategy*, Department of Sustainability and Environment, Melbourne, 2008, p. 1.

- development of technical solutions that encourage accessibility;
- raising awareness – among existing, new and potential users, and traditional and non-traditional users;
- discoverability of the data – through catalogues and other means;
- determining priorities for data acquisition;
- availability of the data; and
- ensuring that privacy considerations are taken into account.[100]

5.1.1 Access to spatial information

In 2001 ANZLIC, the Spatial Information Council comprising senior officials from all of Australian governments, released the *Guideline principles for spatial data access and pricing policy* to assist jurisdictions establish an effective spatial data access and pricing policy. The principles are:

1. the community should have easy, efficient and equitable access to fundamental spatial data where technology, data formats, institutional arrangements, location, costs and conditions do not inhibit its use;
2. the fundamental spatial data needed by all sectors of the community should be available to support economic, environmental and social needs;
3. governments should seek to maximise the net benefits to the community when developing their spatial data access policies and pricing regimes;
4. fundamental spatial data should be made available online through customer-focussed portals, as one of a number of ways to meet community needs for equity of access;
5. access arrangements should be geared to maximise the use of spatial data resources in both public and private sectors and to encourage the development of an innovative and competitive value-adding industry; and
6. access arrangements should recognise confidentiality, privacy, security and intellectual property rights.[101]

Despite the ANZLIC Guidelines, the Committee received evidence from government and non-government stakeholders about issues with access to spatial information.[102] The report *The value of spatial information* also

[100] Victorian Spatial Council, *Victorian spatial information strategy*, Department of Sustainability and Environment, Melbourne, 2008, p. 26.
[101] ANZLIC, 'Guiding principles for spatial data access and pricing policy', viewed 20 January 2009, <http://www.anzlic.org.au>.
[102] Australian Spatial Information Business Association, *Submission*, no. 78, 24 September 2008; Office of Spatial Data Management, *Submission*, no. 24, 20 August 2008; Open Source Geospatial Foundation Aust-NZ, *Submission*, no. 33, 2 August 2008; RP Data Ltd,

raised concerns about accessibility, and claimed that the ANZLIC guidelines had not been achieved in Australia.[103] The report suggested that a lack of comprehensive policies for simple and effective access, quality of data, and inconsistent licensing models, had created difficulties for some spatial data users, particularly in the sectors of property and services, construction, government, transport and agriculture.[104] It was estimated, for example, that the productivity impact of all the sectors examined in the report could have been 5 to 15 per cent higher in 2006-07 had these access constraints not existed.[105]

In its submission, the VSC claimed that despite investments to improve access to spatial data, users consider it difficult to obtain, difficult to understand, and expensive to process and apply.[106] The following issues were also identified as affecting access to spatial data:

- government agencies operating as separate, sometimes competing entities;
- lack or limited culture of sharing information;
- lack of integration of different technical developments and systems; and
- lack of standard licensing approach to accessing government information and data.[107]

The Australian Spatial Information Business Association (ASIBA), the peak national industry body for the spatial information industry, raised the issue of discoverability of information in its submission to the Inquiry and proposed the adoption of a national approach as a solution:

> Without a single national Australian Spatial Data Infrastructure, which addresses issues of discoverability, quality, standards, and access and pricing the broader community does not receive value for its investment in spatial data. Too often agencies at all levels of government collect data that remain locked away in silos. This is costly duplication and underutilisation of a valuable community resource.[108]

The Committee believes the adoption and implementation of the proposed Information Management Framework (IMF) by the Victorian Government will enhance the way government-owned spatial data is managed. This is an important step for improving access to information, and ensuring its value is fully realised.

Submission, no. 39, 22 August 2008; Victorian Spatial Council, *Submission*, no. 41, 22 August 2008.

[103] ACIL Tasman, *The value of spatial information*, Canberra, 2008, p. 148.

[104] ACIL Tasman, *The value of spatial information*, Canberra, 2008, p. xxiii.

[105] ACIL Tasman, *The value of spatial information*, Canberra, 2008, p. 156.

[106] Victorian Spatial Council, *Submission*, no. 41, 22 August 2008, p. 12.

[107] Victorian Spatial Council, *Submission*, no. 41, 22 August 2008, p. 12.

[108] Australian Spatial Information Business Association, *Submission*, no. 78, 24 September 2008, p. 5.

Finding 5: There is substantial potential for spatial data held by the public sector to contribute to new commercial and public services and research. There are also significant opportunities for access to spatial data held as public sector information to be improved.

5.2 Public sector research

The Australian public sector research system comprises three key sectors, including higher education institutions, medical institutes and publicly funded research agencies (PSRA). These sectors are considered knowledge organisations, the core objectives of which are to generate, acquire and transfer knowledge.[109] In particular, PSRAs have focussed on the generation of knowledge through research, and the transfer of knowledge to government, industry and the community.[110] The main Australian PSRAs are the Commonwealth Scientific and Industrial Research Organisation (CSIRO) and the Defence, Science and Technology Organisation (DSTO).[111]

The Australian Bureau of Statistics' (ABS) annual report on *Research and experimental development, all sector summary, Australia* indicated that in 2006-07 research and development expenditure by government organisations was $2,954.1 million, an increase of 19 per cent in current price terms from 2004-05. Of this, the Australian Government contributed $1,893 million and the states and territory governments contributed a combined $1,061 million. Expenditure by state and the territory governments was highest in Victoria ($723,381), followed by NSW ($674, 248).[112]

The Productivity Commission's report on *Public sector support for science and innovation* indicated that the Australian Government is also a major research and development contributor through the PSRAs. In 2005-06, 23 per cent of Australian Government research and development expenditure was allocated to PSRAs, with CSIRO and DSTO receiving 70 per cent of the total PSRA funding for that year.[113]

At the state level, the Victorian Government is making substantial commitments to research and development (R&D), mainly through its Science, Technology and Innovation (STI) Initiative. This initiative was established in 2000, accompanied by the announcement of $310 million first round grants by the Victorian Government. A further $298 million was allocated in the 2002-03 budget. The purpose of the STI Initiative is to

[109] PhillipsKPA, *Knowledge transfer and Australia's universities and publicly funded research agencies* Commonwealth of Australia, Canberra, 2006, p. 5.
[110] PhillipsKPA, *Knowledge transfer and Australia's universities and publicly funded research agencies* Commonwealth of Australia, Canberra, 2006, p. 5.
[111] Productivity Commission, *Public support for science and innovation*, Commonwealth Government, Canberra, 2007, p. 464.
[112] Australian Bureau of Statistics, *Research and experimental development, government and private non-profit organisations, Australia, 2006-07*, ABS, Canberra, 2008.
[113] Productivity Commission, *Public support for science and innovation*, Commonwealth Government, Canberra, 2007, p. 464.

boost Victoria's capabilities in science and technology, with an emphasis on research, development and commercialisation.[114]

5.2.1 Access to publicly funded research

Both internationally and in Australia, there has been interest in improving access to publicly funded research. The open access movement, for example, emerged in response to the ease in which the internet and related technologies allowed information, and in particular research and scholarly material, to be disseminated and exchanged. Open access is defined as:

> ...the free (gratis) online availability of the research results that scholars give away themselves (peer-reviewed journal articles and conference papers, mostly), provided by authors upon acceptance for publication and made permanently available without restrictions on use.[115]

According to the Open Access to Knowledge (OAK) Law Project, open access to publicly funded research is justified because:

- the wide dissemination of and access to research allows later work to be informed by the earlier work of others, and as a consequence may reduce duplication of research and increase collective learning;
- the public should have access to research funded through the taxation system; and
- open access to research and scholarly material through the internet provides equal learning opportunities to researchers and education institutions in developing nations, many of which could not afford costly subscription fees.[116]

Internationally, there have been a number of initiatives promoting principles of open access in research, commencing in 1996 with the release of the Bermuda Principles by the International Human Genome Sequencing Consortium. These principles promoted the rapid and free exchange of pre-published data on gene sequences.[117] Another significant initiative is the *Budapest Open Access Initiative*, which was developed by the Open Society Institute in 2002. This Initiative called on interested institutions and individuals to help open up access to peer-reviewed journal literature and remove the barriers (particularly price barriers) that prevent this from occurring.[118]

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[114] Victorian Government, *Victorian Government Innovation Statement*, Melbourne, 2002, p. 12.
[115] Alma Swan, 'Open access: why should we have it?' viewed 20 January 2009, <http://www.keyperspectives.co.uk/>.
[116] Kylie Pappalardo, *Understanding open access in the academic environment: a guide for authors*, Queensland University of Technology, Brisbane, 2008, pp. 3-4.
[117] Kylie Pappalardo, *Understanding open access in the academic environment: a guide for authors*, Queensland University of Technology, Brisbane, 2008, p. 11.
[118] Open Society Institute, 'Budapest open access initiative', viewed 19 March 2009, <http://www.soros.org>.

In 2004, the Organisation for Economic Co-operation and Development (OECD) Committee for Science and Technology Policy adopted a *Declaration on access to research data from public funding*, where member countries committed to work toward the establishment of open access regimes for digital publicly funded research in accordance with specified principles, such as openness, transparency and legal conformity.[119]

In Australia, the Australian Research Council (ARC) and the National Health and Medical Research Council (NHMRC) released a joint statement in January 2007 encouraging researchers to make the results of research that the Councils fund publicly available, whenever possible. The Committee commends ARC and NHMRC support for open access to research findings.

In its report *Public sector support for science and innovation*, the Productivity Commission argued that mandatory requirements would better meet the aim of free and public access to publicly-funded research results.[120] This is despite claims that requiring publicly funded research to be made available via open access could have a detrimental impact on the journal publishing industry. According to the Australian Publishers Association, the increasing availability of peer-reviewed manuscripts in repositories "will lead to cancellations and the eventual demise of the journal upon which their peer-reviewed process depends."[121] A possible solution, as noted by the Productivity Commission, is the "author pays" approach whereby authors are responsible for paying publishers or repositories a fee on the basis that the publication is publicly and freely accessible. The Public Library of Science (PLoS), for example, charges authors fees of between US$1300 and US$2850 to publish in one of its journals.[122] The open access publisher, BioMed Central supports this approach:

> …Australian research institutions and funders should follow the lead of Wellcome, the NIH, and RCUK, by ensuring that their researchers have funds available to them to allow them to publish in open access journals which charge a fee for publication, rather than forcing them to publish in journals with no fees but which are not fully open access.[123]

While it would be difficult for the Victorian Government to require research agencies and higher education institutions to completely comply with an open access policy, it does have a role in encouraging this practice. The Government should encourage, as part of its funding agreements with these organisations, that research results be deposited in open access journals or repositories. The Committee believes this is an important step to maximise the value of the Government's research and development investment, and further contribute to scientific research and innovation.

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[119] Productivity Commission, *Public support for science and innovation*, Commonwealth Government, Canberra, 2007, p. 228.
[120] Productivity Commission, *Public support for science and innovation*, Commonwealth Government, Canberra, 2007, p. 240.
[121] Australian Publishers Association, *Submission*, no. 52, 22 August 2008, p. 2.
[122] Public Library of Science, 'Questions about publication fees', viewed 13 May 2009, <http://www.plos.org>.
[123] BioMed Central, *Submission*, no. DR124, Public support for science and innovation, Productivity Commission, p. 2.

Recommendation 8: That the Victorian Government encourage as part of its funding agreements with research agencies and higher education institutions that research results be deposited in open access journals or repositories. The Government should consider providing additional funds to these agencies to allow them to publish in open access journals that charge a fee for publication.

5.3 Government-held patents

The focus of the Committee's Inquiry has principally been on copyright, as the vast majority of the materials, information and data held by Government are suitable for release fall under the *Copyright Act 1982 (Cth).* However, the Committee also briefly considered issues surrounding the application of patent to government-held IP.

Patents are similar in some regards to copyright, in that a patent permits the owner the right to exclude, or place conditions on, the use of patented material by others. Patents differ from copyright because they require the creator or inventor of the device or process to prove its worth prior to being granted a right to exclusion. In Australia applications for patent must be made through IP Australia, the Commonwealth Agency that administers patents, trade marks, designs and plant breeder's rights systems within Australia. Patents may be granted for a device or machine, an industrial, chemical or biochemical product or process, computer hardware and software, or business methods. Criteria for the grant of patent, as described on IP Australia's *Patents Guide* are that it:

- be a manner of manufacture, a legal term used to distinguish inventions which are patentable from those which are not. No matter how ingenious or unusual they may be, you cannot patent artistic creations, mathematical models, theories, ideas or purely mental processes;
- be new (the legal term is "novel"), which means that the invention has not been publicly disclosed in any form, anywhere in the world. Examples of disclosures that could show your invention is not new include published patent specifications (both Australian and foreign), textbooks and technical journals, internet sites, or the sale or use in a public area (including demonstrations) of a product in Australia;
- involve an inventive step for a standard patent, that is to say the invention must not be obvious to someone with knowledge and experience in the technological field of the invention;
- involve an innovative step for an innovation patent, that is, there must be a difference between the invention and what is known about that technology, and this difference must make a substantial contribution to the working of the invention;
- be useful, your invention should do what you say it will do; and
- not have been secretly used by you or with your consent.[124]

A key condition upon the grant of patent is that the patent be published. As such, the intention of a patent is that the rights of an inventor to exclude

[124] IP Australia, *The patents guide*, Canberra, 2009, p. 5.

others from using the invention is balanced by the requirement that key information about the device is disclosed, and so may inform the wider community, and provide information for the development of new inventions or innovations.

While in principal patents appear to provide a balance between disclosure and incentive to create, the Committee was told that the proliferation of patents could in fact prevent invention and innovation, or the delivery of new products to the market. This is because with the development of increasingly complex devices and processes, a final product may incorporate not only original inventive or innovative material, but also one or more other patented devices or processes held by third parties. Because any patent holder has the right to prevent use of their patent, bringing the new device to the market may require huge transactional costs from the process of: a) identifying whether a patent exists on each component of the device or process; and b) obtaining permission from the patent holder for use of that component. In effect, the risks of commercial development of an invention or innovation being compromised are greatly increased, because if just one holder of a patent for a component refuses permission for its use the entire device or process must be redesigned or abandoned.

Finding 6: The proliferation and interdependence of patents can act as a barrier to innovation and the delivery of new products to the market.

The Committee met with Prof. Richard Jefferson, Chief Executive Officer of CAMBIA, to discuss initiatives his organisation has developed to address these key issues with patents. The first of these addresses barriers and transactional costs associated with identifying existing patents. CAMBIA hosts Patent Lens, which provides a “worldwide, open-access, free full-text patent informatics resource”, through which searches for existing patents can be conducted.[125] Patent Lens is innovative, as it provides a free and multi-jurisdictional patent search and retrieval service. It is an example of the type of non-profit service that can emerge when PSI is made available for use, and the Committee commends CAMBIA for its work developing and making Patent Lens available to users world-wide.

While Patent Lens addresses transactional costs for identifying existing patents, another important initiative from CAMBIA attempts to address difficulties obtaining permission from patent holders for use of an invention or innovation. BiOS (Biological Open Source) Licences have been developed by CAMBIA to allow groups of patent holders to share and develop new technologies, and agree not to prevent the development of new technologies and/or products by members of the licence group. BiOS Licences provide a legally enforceable framework to allow use of patented and non-patented technology, which may include materials and methods, within a group of researchers who agree to the principle of responsible sharing (a “protected commons”). Those who join a BiOS "concordance"

[125] CAMBIA, 'Patent lens', viewed 30 March 2009, <http://www.bios.net>.

agree not to assert IP rights against each others' use of the technology to do research.[126]

Under the BiOS licensing system, both products and improvements can still be patented, and be developed for profit or public good. However, licensees may not assert rights within the protected commons to exclude other licensees from access to improvements.[127] Within the BiOS licensing system, CAMBIA has developed BioForge. These licences impose, instead of royalties, conditions to maintain the technology available for further innovation. BioForge is an internet-based platform of tools that allows scientists in diverse locations to find out about and work together with those who are in a position to apply their research.

The Committee recognises that the BiOS and BioForge are developing products, but believes that the intention of the BiOS and BioForge licences to create a version of 'open content' licensing for patent information is worthwhile, and if adequately subscribed, may create a research environment that can contribute to the development of new and innovative technologies. For this reason the Committee recommends that the branches of the Victorian Government involved in biological innovation and research, including biotechnology development, examine the potential for participation in the BiOS licensing system.

Recommendation 9: That the Victorian Government encourage divisions operating in the fields of biological innovation and research, including biotechnology development, to consider participating in the BiOS licensing system.

5.4 Educational materials

The education system, comprised largely of schools, TAFES and universities, are key users of government-owned materials. This includes materials produced by government specifically to support teaching and learning, and materials produced by and for governments as a by-product of other government functions and responsibilities. The Victorian Department of Education and Early Childhood Development (DEECD) provides school communities with a variety of materials, many of which are easily accessible through the DEECD website. As is the practice of all other Australian education departments, the DEECD produces and makes information available about its curriculum, types of educational resources and programs used to deliver the curriculum, and its assessment mechanisms. This information is typically made available to anyone, including teachers and students located in other jurisdictions.

Public and free access to these types of materials is of immense value to the education system, particularly the schools sector. It can contribute to the provision of a robust and enriching curriculum, and facilitate flexible learning through the open sharing of learning practices. It also allows the education system to work collaboratively with other jurisdictions to create a

[126] CAMBIA, 'About BiOS licenses and MTAs', viewed 30 March 2009, <http://www.bios.net>.
[127] CAMBIA, '"Biological Open Source" is not a new way to patent, but a new way to share the capability to use patented technology', viewed 30 March 2009, <http://www.bios.net>.

world-class curriculum in Australia. AEShareNet Limited made this point in its submission to the 2004 review of Crown copyright:

> Learners and teachers are therefore heavily dependent on having early, convenient and inexpensive access to works produced by and for governments. Making those works available contributes a great deal to education and training, and hence to the quality of the workforce, and to the quality of civic decision-making on such important matters as health and the environment.[128]

5.4.1 Access to government-owned educational materials

While there are few limitations to schools accessing government-owned educational materials, costs associated with copying and communicating those materials can act as a barrier to their extensive use.

Under the *Copyright Act 1968*, Part VA (copying and communicating TV and radio programs) and Part VB (copying and communicating text, images and notated music) permit educational institutions to use copyright material for educational purposes without permission from the copyright owner.[129] Educational institutions are required to pay for the use of these materials through the Copyright Agency Limited (CAL), which is responsible for collecting licence fees on behalf of authors and creators whose materials have been copied.

Licence fees are calculated on a per student basis using annual surveys. CAL conducts these surveys with a representative selection of schools throughout Australia, requiring selected schools to keep records of all their copying for the duration of their participation in the survey. These records are used to determine copying volumes and to identify the works being copied, which are then applied pro-rata to the number of schools throughout Australia. CAL then distributes funds annually to members of the agency whose works were copied in the selected schools during the survey.[130]

According to the Copyright Advisory Group, a committee of the Ministerial Council on Education, Employment, Training and Youth Affair (MCEETYA), copying costs in the education sector have increased exponentially in recent years.[131] A change in the formula for calculating licence fees from a flat rate to a per student basis is reportedly the reason for the increase, with copying costs rising from $9.6 million in 2002 to $51.8 million in 2006.[132]

A key concern with the calculation of licence fees is that an extensive amount of copying and communicating in schools is of material produced by government education departments and other education providers, and

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[128] AEShareNet Limited, *Submission*, Crown copyright law review, Copyright Law Review Committee, p. 3.
[129] Copyright Act 1968 (Cth).
[130] Copyright Agency Limited, 'Guidelines for schools, TAFES and independent educational institutions', viewed 23 January 2009, <http://www.copyright.com.au>.
[131] Copyright Advisory Group, 'Smart copying initiatives', viewed 23 January 2009, <http://www.smartcopying.edu.au>.
[132] icommons, 'Open education showcases: initiatives in Australia', viewed 23 January 2009, <http://icommons.org/>.

this is not excluded from the CAL surveys. Fees collected by CAL on behalf of government education departments are dispersed back to those departments after deduction of administration costs by CAL. As a consequence, schools are paying fees to copy and communicate their own material and other government-owned materials, of which only a proportion is returned to government.[133] In identifying this issue, MCEETYA questioned the appropriateness of the education sector paying for information that is produced by publicly funded institutions for the purpose of public information.[134] Ms Kim Weatherall also raised this point in her presentation to the Committee:

> One of the problems that the New South Wales Government has been very concerned with in this has been the circle of money - that government provides money to public schools, public schools photocopy government documents, money is collected for the photocopying of that government document by the collecting society and the collecting society takes 20 per cent off the top and then pays the money to government for the photocopying of government documents.[135]

There are also concerns regarding costs associated with copying or downloading digital content, which is a growing practice among schools and students. While an extensive amount of content taken from the internet is publicly and freely available, it is often counted as a copying activity for the purposes of the CAL surveys and for calculating fees. This is despite copyright owners in these cases deciding to place material online without expecting to be remunerated.[136]

A number of ”Smart Copying” initiatives have been developed to provide practical strategies to promote cost-effective copyright practices in the classroom. One initiative is the National Educational Access Licence for Schools (NEALS), which is an agreement between the Commonwealth Department of Education, Employment and Workplace Relations (DEEWR), the state and territory education departments, and the Catholic and independent schools sectors. The agreement allows participants to copy and communicate material from each other’s websites and publications for educational use, free of charge.[137] Materials displaying the NEALS logo can be copied by other education departments or schools free of charge. These materials are also not counted for the purpose of calculating licence fees payable under the *Copyright Act 1968*.[138] Third party licensors, such as other government departments and non-government organisations, also have the option to licence their materials to NEALS, which allows their materials to be distributed in schools free of

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[133] Delia Browne, 'National Education Access Licence for Schools (NEALS)', Paper presented at the *Unlocking IP 2006*, University of New South Wales, Sydney, 2006.
[134] Delia Browne, 'National Education Access Licence for Schools (NEALS)', Paper presented at the *Unlocking IP 2006*, University of New South Wales, Sydney, 2006.
[135] Kimberlee Weatherall, Senior Lecturer, TC Beirne School of Law, University of Queensland, *Transcript of evidence*, Queensland, 12 August 2008, p. 3.
[136] Seb Chan, 'Weatherall on CAL and schools paying license fees for the internet', viewed 12 May 2009, <http://www.powerhousemuseum.com>.
[137] Copyright Advisory Group, 'National Educational Access Licence for Schools (NEALS)', viewed 23 January 2009, <http://www.smartcopying.edu.au/scw/go/pid/748>.
[138] Delia Browne, 'National Education Access Licence for Schools (NEALS)', Paper presented at the *Unlocking IP 2006*, University of New South Wales, Sydney, 2006.

charge and also potentially reduce CAL administration costs paid by schools.[139]

The Committee believes that the Victorian Government should seek to simplify arrangements for the use of its information and data by schools by ensuring it does not form part of the fees disbursement arrangements currently in place with the CAL.

Recommendation 10: That the Victorian Government encourage departments to identify and publish materials under NEALS to allow these materials to be used freely for educational purposes by Australian schools.

[139] Delia Browne, 'National Education Access Licence for Schools (NEALS)', Paper presented at the *Unlocking IP 2006*, University of New South Wales, Sydney, 2006.

Chapter Six: Key points

- All information and data created by the Victorian Government and the public sector is subject to copyright under the *Copyright Act 1968 (Cth)*. While the removal of copyright from Victorian Government public sector information (PSI) has been proposed as a means to simplify access to and re-use of PSI, open licences are likely to provide the best means for Government to increase access to and re-use of PSI without requiring that intellectual property rights be relinquished.

- A range of open content licences currently exist. Creative Commons (CC) licences are the most widely recognised open content licences, which is based on the underlying principle of 'some rights reserved', whereby a pre-determined set of licensing conditions allow copyright owners to grant some rights to potential licensees while retaining other rights.

- CC licences are currently utilised by agencies in the Commonwealth and Queensland Governments. The Queensland Government estimates that CC licences will be applicable to 85 per cent of government PSI.

- Access to and re-use of Victorian PSI is likely to be most effectively implemented through the use of CC licences for the release of most government information and data.

Chapter 6

Chapter Six: Licensing public sector information

Discussions about improving access to public sector information (PSI) typically focus on how to increase its availability. However, as noted throughout this report, there is increasing interest in how to facilitate re-use of PSI. In considering both issues of accessibility and reusability, the Committee recommended that open access be the default position of the proposed Information Management Framework (IMF) (see Chapter Two). This Chapter examines how the Victorian Government can enhance re-use of PSI through appropriate licensing systems. Because all licensing systems fall under the *Copyright Act 1968 (Cth)*, relevant sections of this Act are considered in the context of its role in protecting government-owned intellectual property (IP).

6.1 Copyright Act 1968 (Cth)

The purpose of the *Copyright Act 1968 (Cth)* is to provide incentives for people to produce new works for the benefit of society as a whole. According to the Australian Copyright Council (ACC), this incentive typically equates to the opportunity for payment when others use and disseminate those works. Copyright can also reward people who create works without expecting payment by, for example, requiring that the original authors be properly acknowledged for their contribution.[140] Essentially, copyright allows the creator (or owner) of a work to determine the conditions under which it is distributed or used.

Part VII of the *Copyright Act 1968* describes Crown copyright provisions, which detail the laws for ownership and re-use of copyright materials specific to "the Commonwealth and or the State." These provide particular copyright arrangements for works produced by or for the Commonwealth or a State.[141] Under section 176(2), copyright ownership is granted to the Commonwealth or the State in an original literary, dramatic, musical or artistic work made by or under the control of the Commonwealth or the State. Section 178(2) contains a similar provision for sound recordings and cinematography. The duration of Crown copyright in original works is 50 years after the expiration of the calendar year in which the work was first published. [142]

6.1.1 Review of Crown copyright

In 2005, the Commonwealth Copyright Law Review Committee (CLRC) completed a review of Crown copyright. This was initiated by the

[140] Australian Copyright Council, 'Copyright purposes and sources', viewed 6 February 2009, <http://www.copyright.org.au>.
[141] Copyright Act 1968 (Cth).
[142] Copyright Act 1968 (Cth).

Commonwealth Attorney-General who requested that the CLRC inquire into Crown ownership to consider, among other things, the extent and appropriateness of government reliance on copyright to control access to, and/or use of, information.

The interaction of Crown copyright and competition policy was a key factor leading to the Review, an issue that was previously investigated by the Ergas Committee in its 2000 *Review of intellectual property legislation under the Competition Principles Agreement*.[143] The Ergas Committee determined that section 176 of the *Copyright Act 1968* placed government in a favourable position compared to other contractors or employers, and considered this situation to be inconsistent with the principle of competitive neutrality as provided in the Competition Principles Agreement.[144] Consequently, the Ergas Committee recommended that government not be given preferential treatment under the Act. Rather than amend section 176, as recommended by the Ergas Committee, the Australian Government opted to develop 'best practice' policy guidelines.

In *Crown copyright*, the CLRC reaffirmed the Ergas Committee's recommendation and proposed that provisions relating to the subsistence and ownership of Crown copyright in sections 176-9 be repealed. The CLRC claimed "there is no justification for government to have a privileged position compared with other copyright owners."[145] The Australian Government is yet to respond to the recommendations proposed in the Review.

6.1.1.1 Access to government-owned information

In its final report, the CLRC identified two key principles that informed its recommendations. The first, which is discussed above, referred to the need for government to be on the same footing as other parties in regard to the use and protection of copyright materials. The second focussed on promoting broad access to government materials,[146] which lead to Recommendation 4 of the report:

> [The CLRC recommends that] copyright in certain materials produced by the judicial, legislative and executive arms of government be abolished. Those materials are:
>
> - bills, statutes, regulations, ordinances, by-laws and proclamations, and explanatory memoranda or explanatory statements relating to those materials;
> - judgments, orders and awards of any court or tribunal;
> - official records of parliamentary debates and reports of parliament, including reports of parliamentary committees;

[143] Intellectual Property and Competition Review Committee, *Review of intellectual property legislation under the competition principles agreement*, IP Australia, Phillip, ACT, 2000.
[144] The Competition Principles Agreement was introduced by all Australian governments in 1996, and requires that the prices charged by government businesses are adjusted to reflect the advantages and disadvantages of public ownership.
[145] Copyright Law Review Committee, *Crown copyright*, Commonwealth of Australia, Canberra, 2005, p. xxi.
[146] Copyright Law Review Committee, *Crown copyright*, Commonwealth of Australia, Canberra, 2005, p. xix.

- reports of commissions of inquiry, including royal commissions and ministerial and statutory inquiries; and
- other categories of material prescribed by regulation.[147]

The CLRC proposed this recommendation in response to strong public interest in dissemination of the listed materials, noting that "open access to government information is an essential characteristic of modern democracy."[148] The CLRC also advised that the incentive for creators to safeguard the integrity of materials, a traditional motivation for copyright ownership, is not a persuasive argument in the case of primary legal materials.[149]

While the Committee supports the intent of these arguments, it is unclear whether removal of copyright would significantly improve the availability of materials listed by the CLRC to the public, particularly as they are already widely disseminated. Furthermore, there is little evidence to indicate that the existence of copyright limits access to primary legal and judicial materials.

There is, on the other hand, evidence to suggest that copyright, and in particular Crown copyright may inhibit the reusability of these and other categories of PSI (see Text Box 1) – an issue that was not considered by the CLRC. Ms Catherine Bond, in her article *Reconciling Crown copyright and reuse of government information: an analysis of the CLRC Crown copyright review*, regarded this as a significant oversight, stating that the CLRC recommendations "do not reflect reuse as being currently a primary demand on government materials."[150]

Text Box 1: Google Australia and the bushfire mashup

Ongoing issues with Crown copyright provisions were highlighted in news reports from February 2009 about the refusal of the Victorian Government to provide Google Australia with data for Google's bushfire map mashup.[151]

In response to the Victorian bushfire disaster, the Google team developed the idea of overlaying bushfire data onto Google Maps to provide a real-time map of the fires' locations and intensities. The Country Fire Authority, which manages fires on private lands, consented and within four hours the new map was live. With over 1 million page views in four days, the Google Maps showing the bushfires was considered invaluable for tracking the extent of the fires.

The Google team proposed the same concept to the Victorian Department of Sustainability and Environment, which manages fire on public lands, but

[147] Copyright Law Review Committee, *Crown copyright*, Commonwealth of Australia, Canberra, 2005, p. 138.
[148] Copyright Law Review Committee, *Crown copyright*, Commonwealth of Australia, Canberra, 2005, p. xxv.
[149] Copyright Law Review Committee, *Crown copyright*, Commonwealth of Australia, Canberra, 2005, p. xxiv.
[150] Catherine Bond, 'Reconciling Crown copyright and reuse of government information: an analysis of the CLRC Crown copyright review', *Media & Arts Law Review*, vol. 12, no. 3, 2007.
[151] David Braue, 'Australia government limited Google's bushfire map', *CNET News*, 16 February 2009, viewed http://news.cnet.com; David Braue, 'Vic Govt limited Google's bushfire map', *Zdnet Australia*, 16 February 2009, viewed http://www.zdnet.com.au.

it was not successful in seeking the Department's approval. According to Mr Alan Noble, Google Australia's Engineering Director, the key barrier to this initiative going ahead was Crown copyright, which prevents use of government information without explicit consent.

Google Australia experienced similar challenges with the Australian Government when it attempted to obtain access to data from the National Public Toilet Map. Citing protection of the data under Crown copyright, the Department of Health and Ageing refused to provide the requested data to Google.

In a presentation provided at the Broadband and Beyond conference, Mr Noble reflected on these examples as reason why Commonwealth data protection provisions should be relaxed to promote open access to PSI.[152]

Finding 7: The existence of copyright in government-owned materials does not necessarily limit the extent to which they can be made publicly available. Copyright and in particular Crown copyright may, however, limit opportunities for re-use of those materials.

6.1.1.2 Management of government-owned material

The Committee also wishes to draw attention to Recommendation 12 and Recommendation 13 of *Crown Copyright*. These recommendations focus on the management of Crown copyright, which may indirectly influence accessibility:

> Recommendation 12: The Committee recommends that uniformity in the management of Crown copyright across State and Territory Governments be referred to the Standing Committee of Attorneys-General for consideration.
>
> Recommendation 13: The Committee recommends that each State and Territory Government that has not already done so consider giving a central agency responsibility for managing Crown copyright, similar to the Commonwealth CCA model.[153]

Currently the management of Crown copyright is the responsibility of individual jurisdictions. The Australian Government operates under a centralised model for the management of copyright, with the state and territory governments each adopting a decentralised approach. As a consequence there are inconsistent copyright management practices between, and often within, the Australian jurisdictions. In considering this situation, the CLRC advised that "poor management of Crown copyright can result in unnecessary restrictions to access to government copyright material and less cost-effective management."[154] Similarly, a report by the Victorian Auditor-General's Office tabled in 2005 entitled *Managing intellectual property in government agencies* determined that a lack of clear IP policies can contribute to inefficiencies across government:

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[152] David Braue, 'Australia government limited Google's bushfire map', *CNET News*, 16 February 2009, viewed http://news.cnet.com.
[153] Copyright Law Review Committee, *Crown copyright*, Commonwealth of Australia, Canberra, 2005, pp. xxxi, xxxii.
[154] Copyright Law Review Committee, *Crown copyright*, Commonwealth of Australia, Canberra, 2005, p. xxxi.

> The lack of documented decision-making criteria has an impact on the transparency and defensibility of decisions. Decisions on allocation of IP rights can have significant economic consequences, and the current lack of a clear framework exposes staff to risks that their decisions are not seen as fair and impartial.[155]

The Committee received evidence during this Inquiry about issues arising from a lack of standardised licensing practices across and within governments, and its impact on access to government materials. For example, in its submission to the Committee, the Australian Government's Office of Spatial Data Management (OSDM) advised that the diverse array of licensing regimes that data custodians use when supplying data can become a significant barrier to using that data:

> Data licensing is an issue because of the diversity of licensing regimes that data custodians use when supplying data. Acquisition of data from multiple agencies requires a significant legal effort (time and cost) in order to understand the implications of agreeing to the conditions of a particular licence. The National Land and Water Resources Audit has practical examples where data has been provided to them by one Australian jurisdiction, but when merged with data from other jurisdictions could not be passed back to the original contributor due to their own licensing constraints. There are multiple licensing mechanisms in place across all Australian governments and it is not uncommon to have different data licensing agreements within a single department or agency.[156]

Deakin University informed the Committee that seeking permission to access and use PSI can be a lengthy process because the contacts for authorisation cannot be easily identified on websites or through direct inquiry.[157] The submission to the Inquiry by the University of Melbourne noted that:

> At present, researchers wishing to gain access to public sector information must negotiate agreements with a variety of government departments or agencies, each of which seems to have its own policies and procedures for such negotiations.[158]

Finding 8: A lack of standardised licensing practices between and within governments can act as a barrier to public sector information access.

As noted above, in *Crown copyright*, the CLRC advised that a coordinated approach to the management of copyright ensures consistency and will assist users to access and understand information about copyright. The Australian Government model, referred to in Recommendation 13 of the CLRC report above, requires the Commonwealth Copyright Administration (CCA) to be responsible for the administration and protection of Australian Government publications. All publications are required to display a

[155] Victorian Auditor-General, *Managing intellectual property in government agencies*, Victorian Auditor-General's Office, Melbourne, 2005, p. 35.
[156] Office of Spatial Data Management, *Submission*, no. 24, 20 August 2008, p. 7.
[157] Deakin University, *Submission*, no. 36, 22 August 2008, p. 5.
[158] University of Melbourne, *Submission*, no. 34, 22 August 2008, p. 9.

copyright notice advising potential users to forward any queries or requests to the CCA.[159]

The position of the Australian Government and the Standing Committee of Attorneys General (SCAG) in response to the CLRC's recommendations is not yet known, although the response could potentially have a substantial effect on how copyright is managed throughout the Commonwealth, States and Territories. While the Committee acknowledges this parallel development, it is also in a position to enunciate its own views on the matter of government management of copyright.

The Committee believes that the introduction of a consistent, across-government licensing system for the use of copyright materials is necessary, and would substantially assist the re-use of government materials by improving the efficiency with which terms and conditions can be determined by potential users – both within government and by other public and private users.

Recommendation 11: That the Victorian Government develop a consistent copyright licensing system for use across all government departments.

The Committee believes the development of licences should be coordinated across government, and located within a particular branch of government. This will ensure a level of uniformity in the provision of copyright-related information and advice across the Victorian Government, potentially resulting in greater efficiency in the management of licensing within individual departments. The Committee also believes there is merit in the creators of PSI within government acting as custodians to information, and consequently, having responsibility for allocating licences for that information. The Committee's recommendations regarding custodianship of data are discussed in Chapter Eight.

Recommendation 12: That the Victorian Government establish a central office to develop a copyright licensing system, and provide advice to government on government copyright.

High level commitment is required from within the Victorian Government to ensure implementation of this recommendation. The Committee considers this issue in Chapter Nine, and proposes a number of mechanisms to support adoption of the IMF by the Victorian Government.

6.1.1.3 Exclusive licensing arrangements

Another issue raised in discussions about access to PSI is the extent to which government should enter into exclusive arrangements with third parties for the use of PSI.[160] As noted previously, the preference in Europe and the United States (US) is for government not to enter into exclusive

[159] Australian Government Attorney-General's Department, 'Commonwealth copyright', viewed 10 February 2009, <http://www.ag.gov.au>.
[160] See Graeme Martin, Manager, Consulting, Spatial Vision, *Transcript of evidence*, Canberra, 13 August 2008.

licensing arrangements for the use of PSI.[161] The European Union's (EU) *Directive on the re-use of public sector information*, for example, requires "a prohibition of exclusive arrangements, with an exception for exclusive rights necessary for the provision of a service in the public interest."[162]

In Australia, the Australian Government's *Statement of IP Principles* permits agencies to exploit, or allow others to exploit, their IP for commercial benefit, provided those activities fall appropriately within the agency's functions and objectives. In practice, this may provide a rationale for granting exclusive licences for Australian Government PSI. The *Statement of IP Principles* does require that certain kinds of PSI be made available to the public for use and re-use on a non-exclusive basis unless exceptional circumstances exist."[163] These PSI include copyright material that has been published for the purpose of:

- informing and advising the public of government policy and activities;
- providing information that will enable the public and organisations to understand their own obligations and responsibilities to Government;
- enabling the public and organisations to understand their entitlements to government assistance;
- facilitating access to government services; or
- complying with public accountability requirements.[164]

With regard to the Victorian Government, the Committee notes that the 1991 *Guidelines relating to Victorian Crown copyright* state that "[a]ny right to reproduce Crown copyright material should be granted on a nonexclusive basis."[165] However, as these guidelines are now quite old, the extent to which they inform Victorian Government practice is not known. The guidelines do not explicitly consider re-use of Crown copyright information.

The Committee understands that a revised Crown copyright management policy and a new statement of IP principles are to be considered by the Victorian Government in the near future. Nevertheless, the Committee is of the opinion that the most efficient use of PSI outside the public sector is likely to be achieved when services or products using PSI are developed in a competitive environment. For this reason, the Committee recommends that the Victorian Government adopt guidelines for PSI licensing that

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[161] European Commission, 'Directive 2003/98/EC of the European Parliament and of the Council of 17 November 2003 on the re-use of public sector information', *Official Journal of the European Union*, 2003.
[162] European Commission, 'Directive 2003/98/EC of the European Parliament and of the Council of 17 November 2003 on the re-use of public sector information', *Official Journal of the European Union*, 2003.
[163] Commonwealth Copyright Administration, 'Statement of IP Principles', viewed 28 March 2009, <http://www.ag.gov.au/cca>.
[164] Commonwealth Copyright Administration, 'Statement of IP Principles', viewed 28 March 2009, <http://www.ag.gov.au/cca>.
[165] Government of Victoria, *Guidelines relating to Crown copyright*, Melbourne, 1991.

harmonise with the EU's *Directive on the re-use of public sector information*.

Recommendation 13: That exclusive arrangements not be entered into for licensing Victorian Government public sector information, excepting exclusive rights necessary to protect the public interest.

6.1.2 Removal of copyright.

As noted above, the CLRC recommended that provisions for the subsistence and ownership of Crown copyright in sections 176-9 of the *Copyright Act 1968* be repealed.[166] While this recommendation did not propose the abolition of all copyright on PSI, it draws attention to the role of copyright protection and whether removal could increase access to and re-use of PSI.

6.1.2.1 The role of copyright

One of the core objectives for recognising IP protection in PSI is quality control and ensuring that government information is presented in a complete, accurate and authoritative manner. The Committee notes the role of copyright as a quality control measure may be over-stated in regard to some categories of PSI however, particularly in the case of primary legal and judicial materials. In *Crown copyright*, for example, the CLRC claimed there is limited incentive for legal publishers to misrepresent legislation or judgments when publishing them, and that it was unlikely plagiarism of judgements would increase if copyright were removed.[167]

The Committee also notes that a range of mechanisms other than copyright may help protect the integrity of government materials. Ms Kim Weatherall of the University of Queensland advised the Committee that the Fair Trading Acts and the *Trading Practices Act 1974 (Cth)* provide for actions against misleading information and inaccurate reproductions, as well as for actions against the misuse of state insignia:

> …there are various actions at law, and we have laws at the moment that prevent misleading or unauthorised use of state insignia like royal coats of arms and the like, including the sort of insignia that you have on your report. There are actions against use of material in a way that suggests that it is official or government authorised or government endorsed. Countries all around the world have that sort of action.
>
> People who are going to want to use government materials are going to want to use an authorised source, an official source, an endorsed source or the like. Government always has the power to endorse certain organisations as being an authoritative source of government information.[168]

While the Committee recognises that copyright protection is not the only mechanism to maintain the integrity of government information and data,

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[166] Copyright Law Review Committee, *Crown copyright*, Commonwealth of Australia, Canberra, 2005, p. 129.
[167] Copyright Law Review Committee, *Crown copyright*, Commonwealth of Australia, Canberra, 2005, p. 136.
[168] Kimberlee Weatherall, Senior Lecturer, TC Beirne School of Law, University of Queensland, *Transcript of evidence*, Queensland, 12 August 2008, p. 14.

copyright does offer governments a simple, effective and established way to maintain the quality and authenticity of their materials.

6.1.2.2 Removal of copyright to simplify access

Some commentators on copyright held by government suggest that the simplest way to improve access to PSI would be the removal of copyright. The US provides the most prominent example of how making PSI copyright-free can facilitate re-use of government information and data, as there is no copyright protection of federal government information. The purpose of this in the US is to serve the public interest by keeping government created works free from potential restrictions on dissemination.[169]

It is debatable, however, whether the removal of copyright from Victorian Government PSI would in fact improve access and re-use. Professor Anne Fitzgerald told the Committee that the removal of copyright could further complicate the accessibility of PSI:

> So the reality is that you may - and this is essentially the problem with saying, 'We will do away with copyright' – actually find yourself in a much more complex situation than you are in at the moment. Rather than saying, 'This material is copyright and we put it out under a CC licence,' you have to hunt around and ask, 'Is there actually any copyright in this? Does the government own copyright?' If there is, I still have to go and get permission from them. You might as well have copyright, anyway. Is it essentially to say, 'We will simplify it,' but it is no simpler. In fact, it could be more complex.[170]

Other stakeholders also supported maintaining copyright in PSI. Mr Neale Hooper, the former Principal Project Manager of the Queensland Government's Government Information Licensing (GILF) project, emphasised the need to make copyright more active by sharing copyright material on liberal terms. IP Australia, in looking more broadly at IP protection, advised that IP rights lie at the core of "open" models of innovation.

> Importantly, "open innovation" necessitates the implementation of a business strategy explicitly incorporating IP. There is a risk that the research and business community will weaken their competitive position if they apply "open innovation" without a suitable business strategy which includes IP.[171]

The Committee also heard an alternative interpretation of the term "public domain" as it applies to copyright protection.[172] Traditionally, the meaning of public domain is reflected in the statement "no rights reserved" which implies that no-one owns copyright on material. However, licensing models have now developed that allow access to and re-use of information and data without ceding copyright. One such model is open content licensing,

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[169] Richard Gellman, 'The foundations of United States government information dissemination policy', viewed 27 October 2008, <http://www.oeaw.ac.at>.
[170] Dr Anne Fitzgerald, Adjunct Professor, School of Law, Queensland University of Technology, *Transcript of evidence*, Queensland, 12 August 2008, p. 8.
[171] IP Australia, *Submission*, no. 76, 8 September 2008, p. 4.
[172] Prof Brian Fitzgerald, Professor of Intellectual Property and Innovation, Queensland University of Technology, *Transcript of evidence*, Queensland, 12 August 2008, p. 3.

which is considered an effective way to create a balance between copyright and public domain. Through the use of these licences, governments can increase access to and re-use of their materials without needing to relinquish IP rights.[173]

Finding 9: The removal of copyright from Victorian Government public sector information (PSI) is unlikely to simplify access to and re-use of PSI. Access to and re-use of PSI will be best facilitated by issuing licences in accordance with existing copyright provisions.

6.2 Open content licences

The Inquiry's Terms of Reference required the Committee to consider the potential application of open content licensing to Victorian Government information, and whether the use of this licensing system will enhance discovery, access and use of government information. During the course of the Inquiry, the Committee received extensive evidence supporting open content licensing.

Open content licences were developed in response to growing concerns about the use of copyright material in the online, digital environment. Although the development of the internet and related technologies has enhanced dissemination of information and data, it is not always clear to users that copyright law applies almost every time copyright material is copied or communicated, digitally or otherwise. As a consequence, most users are unlikely to completely understand their rights and responsibilities in regard to the *Copyright Act 1968,* and in particular whether they are dealing lawfully with copyright material. Due to these issues, the Open Access to Knowledge (OAK) Law Project at the Queensland University of Technology (QUT) argues that copyright law can be a barrier to open access:

> Copyright law can pose a major obstacle to achieving a seamless model of open access. Extraordinary technical advances in our capacity to disseminate and share the results and outputs of publicly funded research have not always been matched by the required changes in legal and contractual arrangements.[174]

According to Professor Brian Fitzgerald, open content licensing offers a mechanism to manage copyright in order to harness network technologies.[175]

Open content licences are intended to facilitate open access to copyright materials. Advocates claim that open content licences improve public access to information by making it and the terms of re-use available on liberal terms. While copyright is still claimed, licence conditions make material "available for use by a broad range of persons, in many ways and

[173] Neale Hooper, 'Why governments and public institutions need to understand open content licensing', Paper presented at the *Open content licensing: cultivating the Creative Commons*, Brisbane, 2005.
[174] OAK Law Project, 'Background and context', viewed 19 March 2008, <http://www.oaklaw.qut.edu.au>.
[175] Prof Brian Fitzgerald, Professor of Intellectual Property and Innovation, Queensland University of Technology, *Transcript of evidence*, Queensland, 12 August 2008, p. 2.

for many purposes, while still precluding some uses of that material."[176] Open content licences use copyright as the legal means to promote open access in a digital, online environment.

Open content licences grant rights of re-use through automated licences. Negotiation between copyright owners and potential licensees is not required as the system allows copyright owners to provide permission in advance through the attachment of licence conditions to the copyright material. Licensees are then informed of the terms of re-use at the time they download the material.

A number of witnesses expressed support for the application of flexible licensing regimes to PSI. Microsoft stated in its submission that an appropriate starting point for governments when selecting a licensing framework is to adopt one that maximises the availability of PSI through the promotion of open and non-discriminatory access.[177] Google Australia also indicated its support for "unfettered access to PSI" where it is made available on equal terms.[178]

A number of witnesses advocated for the application of open content licences to PSI.[179] They argued that open content licences provide governments with a simple mechanism to enhance access to and re-use of PSI, while not requiring licensees to familiarise themselves with a range of different and often complex government licensing arrangements:

> The advantage of open content licensing in the public sector is that it offers a simple, cheap and uniform method of releasing publicly funded copyright material, which can be easily implemented for the benefit of all. Furthermore, open content licensing aligns with key democratic ideals in that it is a non-discriminatory and transparent mechanism for distributing publicly funded knowledge.[180]

Finding 10: Open content licences provide governments with a simple and effective mechanism to facilitate enhanced access to and re-use of copyright protected public sector information in a digital, online environment.

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[176] Queensland Spatial Information Council, 'Stage 2 - A government information open access and use strategy', viewed 28 March 2008, <www.qsic.qld.gov.au>, p. 30.
[177] Microsoft, *Submission*, no. 46, 22 August 2008, p. 1.
[178] Google Australia, *Submission*, no. 54, 25 August 2008, p. 5.
[179] Australian Bureau of Statistics, *Submission*, no. 63, 27 August 2008; Bureau of Meteorology, *Submission*, no. 17, 18 August 2008; Cyberspace Law and Policy Centre, *Submission*, no. 68, 5 September 2008; Deakin University, *Submission*, no. 36, 22 August 2008; Brian Fitzgerald and Anne Fitzgerald, *Submission*, no. 38, 25 August 2008; La Trobe University, *Submission*, no. 49, 22 August 2008; Monash University, *Submission*, no. 69, 5 September 2008; Office of Spatial Data Management, *Submission*, no. 24, 20 August 2008; Open Source Geospatial Foundation Aust-NZ, *Submission*, no. 33, 2 August 2008; Red Hat Asia Pacific, *Submission*, no. 50, 22 August 2008; Scientific Writing and Consulting, *Submission*, no. 9, 9 August 2008; University of Melbourne, *Submission*, no. 34, 22 August 2008; Waugh Partners, *Submission*, no. 74, 5 September 2008; White SW Computer Law, *Submission*, no. 7, 6 August 2008; Wikimedia Australia, *Submission*, no. 67, 5 September 2008.
[180] Brian Fitzgerald, et al., *Internet and e-commerce law*, Lawbook Co, Pyrmont, NSW, 2007, p. 268.

The growing trend toward the re-use of PSI has seen the development of various open content licensing models, which include:

- AEShareNet Limited – an Australian model established by the vocational and training sector that promotes open access to and re-use of educational materials, including some owned by government. This model offers "instant" licences that require no transaction, or "mediated" licences, which are negotiated and may involve fees.[181] According to the Cyberspace Law and Policy Centre (CLPC), this model licences about 3000 learning objects for free educational use, and in some cases with rights to modify. In addition, approximately 600 pages on the internet use its "Free for Education" licence, which allows materials to be freely used and copied for educational purposes but which may not be redistributed to the public;[182]

- Click-Use – this is an online licensing system developed by the UK Office of Public Sector Information (OPSI), which allows potential users to submit online requests for the re-use of Crown copyright material.[183] There are three Click-Use Licences, including the PSI Licence to cover Crown copyright and PSI; the Value-Added Licence to cover value-added Crown copyright; and the Parliamentary Licence to cover parliamentary copyright information. There are no fees associated with the PSI or Parliamentary Licences;[184]

- Creative Archive – established by the British Broadcasting Company (BBC), Channel 4, the Open University and the British Film Institute to make available programs for re-use from their archives. This licence only allows re-use in the UK and it includes a "no endorsement or derogatory use" condition, which does not permit licensed material to be used for promoting political, charitable or other campaigning purposes;[185] and

- BC Commons – the British Columbia (BC) Campus organisation in Canada offers two licensing options for BC public, post-secondary institutions that develop online content. Developers can choose between either a Creative Commons licence or a BC Commons licence that restricts the sharing of information to within the BC, post-secondary system.[186]

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[181] Ed Barker, et al., *The Common Information Environment and Creative Commons*, Common Information Environment, United Kingdom, 2005, p. 16.
[182] Cyberspace Law and Policy Centre, *Submission*, no. 68, 5 September 2008, p. 15.
[183] Ed Barker, et al., *The Common Information Environment and Creative Commons*, Common Information Environment, United Kingdom, 2005, p. 11.
[184] Office of Public Sector Information, 'Click-Use licences', viewed 28 March 2008, <http://www.opsi.gov.uk>.
[185] Ed Barker, et al., *The Common Information Environment and Creative Commons*, Common Information Environment, United Kingdom, 2005, p. 17.
[186] Ed Barker, et al., *The Common Information Environment and Creative Commons*, Common Information Environment, United Kingdom, 2005, p. 17.

6.3 Creative Commons

The most widely recognised open content licensing model is that of Creative Commons (CC), which was founded on the concept of "free culture" by Professor Lawrence Lessig of Stanford University in 2001. Originating in the US, the CC licensing model is now offered in over 60 countries. It was first launched in Australia in 2005 by QUT, which hosts the localised CC project, iCommons.

Similar to other open content licensing models, the CC model is based on the underlying principle of "some rights reserved", whereby a pre-determined set of licensing conditions allow copyright owners to grant some rights to potential licensees while retaining other rights. Supporters of the CC model argue it meets the "basic tenets of a democracy" as licences are non-discriminatory and free for all to access.[187]

In Australia, CC licences are formed from one or more of the following conditions:

1. Attribution (BY) – applicable to every CC work, requiring that whenever a work is copied or redistributed, credit must always be given to the creator;

2. Non-Commercial (NC) – allows others to copy, distribute, display and perform the work, including derivative works based upon it but only for non-commercial purposes;

3. No derivative works (ND) – allows others to copy, distribute, display and perform only verbatim copies of the work, not derivative works based upon it; and

4. Share Alike (SA) – allows others to distribute derivative works only under a licence that comprises the same licence conditions that govern the original work. This licence term does not apply to the no derivative works option.[188]

Based on various combinations of these conditions, six CC licence options are offered in Australia:

a) Attribution (as explained above) (CC-BY);

b) Attribution-ShareAlike (CC-SA) – allows others to use CC work and make derivative works, provided it is licensed on the same conditions as the original work;

c) Attribution-NonCommercial (CC-NC) – allows others to use CC work and make derivative works but only for non-commercial purposes;

d) Attribution-NonCommercial-ShareAlike (CC-BY-SA) – combines the above three options;

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[187] Brian Fitzgerald and Anne Fitzgerald, *Submission*, no. 38, 25 August 2008, p. 6.
[188] Creative Commons Australia, 'Creative Commons licences', viewed 9 May 2008, <http://www.creativecommons.org.au>.

e) Attribution-NoDerivs (CC-BY-ND) – allows others to copy, distribute and transmit the CC work only, provided that credit is given to the creator; and

f) Attribution-NonCommercial-NoDerivs (CC-NC-ND) – allows others to copy, distribute and transmit the CC work only, provided that it is for non-commercial purposes and credit is given to the creator.

Each CC licence is available in three formats:

1. Human-readable deed – described as the "common deed" and is the user-friendly version that provides users with clear instructions of what type of use is allowed for each CC work;

2. Lawyer-readable – is the full legal licence and is always linked to the common deed;

3. Machine-readable – a small section of code that is made available to cut and paste into web pages. When placed in a web page, it displays the CC logo and also includes the Resource Description Framework code, which allows it to be discovered by search engines.[189]

While CC licences were originally developed for use in the digital environment, they can also be applied to offline material. In these circumstances, the offline material should identify which CC licence it is licensed under and the licensors contact details to allow potential licensees to obtain a full copy of the licence. The only difference between applying a CC licence to offline materials compared to online materials is that the offline materials do not include metadata and as a consequence are not searchable on search engines. [190]

Finding 11: Creative Commons is a comprehensive licensing system that can be applied to both online and offline materials.

6.3.1 Application of Creative Commons to PSI

While the use of Creative Commons licences is not yet widespread in government, there appears to be increasing interest in CC licences as providing a simple and effective means to make copyright materials more widely available. A recent high profile government use of the CC licence is by President Obama, who has used the licence on a number of occasions, and in particular for third-party content made available on federal government websites.[191]

The Committee is cognisant that there is also increasing interest in the application of CC licences within Australian government agencies. The most public examples of these to date are the Queensland GILF project

[189] Ed Barker, et al., *The Common Information Environment and Creative Commons*, Common Information Environment, United Kingdom, 2005, p. 14.
[190] CC Wiki, 'Frequently asked questions', viewed 17 February 2009, <http://wiki.creativecommons.org>.
[191] The White House, 'Copyright notice', viewed 15 March 2009, <http://www.whitehouse.gov>.

and the use of CC licences by the Australian Bureau of Statistics (ABS). In December 2008, the ABS announced that it had introduced CC licensing for most of its website content:

> The Australian Bureau of Statistics (ABS) has introduced Creative Commons (CC) licensing for the bulk of the content on this website. This will lessen the restrictions on the use of free data from the website considerably by changing the copyright from "all rights reserved" to "some rights reserved". In effect, what the ABS is asking is only that it be acknowledged as the source of the data. People are free to re-use, build upon and distribute our data, even commercially. This makes a wealth of data readily available to the community, researchers and business, facilitating innovative research and development projects based on quality statistics, and promoting the wider use of statistics in the community, which is one of our core objectives.[192]

The Committee was also told by Mr Ben Searle of the OSDM that the Australian Government was seriously considering the use of CC for some spatial data:

> The Australian Government, through the Spatial Data Management Group, has agreed in principle to move towards the Creative Commons licensing methodology. We are establishing a working group to look at the transition between moving to that licensing regime and our current licensing regimes.[193]

The Committee is aware that CC licences already feature in the access to PSI measures of other Australian jurisdictions. It is likely, therefore, that adoption of the CC licensing system by the Victorian Government presents the best opportunity for future harmonisation between a Victorian PSI licensing scheme and other Australian jurisdictions.

Finding 12: Creative Commons licences are increasingly used and supported by governments within Australia and internationally.

6.3.1.1 Queensland Government Information Licensing Framework

One of the most prominent projects for the application of CC licences to government information is the Queensland Government's GILF program. The purpose of the project is to review best practice and international trends for transactions of PSI, and to develop a new standardised licensing framework for all Queensland Government information with the aim of "providing on-demand access to accurate, consistent and authoritative PSI to support a range of Government initiatives."[194] Initially GILF focused on

[192] Australian Bureau of Statistics, 'Creative Commons licensing is coming to the ABS!' viewed 4 February 2009, <http://www.abs.gov.au/>.
[193] Ben Searle, Manager, Office of Spatial Data Management, Geoscience Australia, *Transcript of evidence*, Canberra, 13 August 2008, p. 5.
[194] Rachel Cobcroft, *Building an Australasian Commons*, Australian Research Council Centre of Excellence for Creative Industries and Innovation, Brisbane, 2008, p. 132.

licensing spatial data, but it was later determined that the licensing framework could apply to any information, product or service.[195]

Following stage 1 of the project, Information Queensland and the Queensland Spatial Information Council (QSIC) recommended that "the CC open content licensing model be adopted by the Queensland Government to enable greater use of publicly available government data and to support data-sharing arrangements."[196] Stage 2 established a new standardised licensing framework for the Queensland Government to support access to and use of data and information by Government, other jurisdictions, and the community and private sectors. The CC model provided the foundation for that framework.[197]

The application of the CC model to government information and datasets was examined in stage 3 of the project, the results of which informed the development of the GILF toolkit. The toolkit comprises the six standard CC licences, which were determined to be applicable to 85 per cent of PSI, and a set of restrictive licence templates for the remaining 15 per cent of PSI affected by privacy, statutory constraints, confidentiality and security classifications.[198]

Finding 13: It is likely that Creative Commons licences can be appropriately applied to around 85 per cent of government public sector information.

A trial implementation of GILF in the Office of Economic and Social Research (OESR) was completed at the end of 2008, allowing the GILF project team to finalise components of the Framework and test its use with OESR information products. The Committee understands that the project resulted in the development of a consultation draft Queensland Government GILF policy, position and guidelines, put out for consultation across the Queensland Government due to be completed on 24 April. Following consultation the draft policy will be submitted for approval by the Queensland Government Chief Information Officer (QGCIO). Following endorsement by the QGCIO the GILF policy, position and guidelines will be available from the QGCIO web site.[199]

6.3.1.2 The National Government Information Licensing Framework project

Arising from the Queensland project, the National GILF project commenced in September 2008. It is funded through contributions from all jurisdictions. In November 2008 a national Round Table seminar was conducted as part of the project, with another seminar planned in 2009. It

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[195] Tim Barker, Assistant Government Statistician, Office of Economic and Statistical Research, Queensland Treasury, *Transcript of evidence*, Queensland, 12 August 2008, p. 8.
[196] Queensland Spatial Information Council, 'Stage 2 - A government information open access and use strategy', viewed 28 March 2008, <www.qsic.qld.gov.au>, p. 2.
[197] Queensland Spatial Information Council, 'Stage 2 - A government information open access and use strategy', viewed 28 March 2008, <www.qsic.qld.gov.au>, p. 2.
[198] Neale Hooper, Principal Lawyer, Office of Economic and Statistical Research, Queensland Treasury, *Transcript of evidence*, Queensland, 12 August 2008, p. 10.
[199] Jenny Bopp, Office of Economic and Statistical Research, Queensland Treasury, *personal communication*, 3 April 2009.

is intended that the project will lead to the development of a GILF toolkit, and that all jurisdictions will able to draw upon the toolkit to validate GILF for use in their respective states and territories.[200]

6.3.1.3 The Australian Bureau of Statistics and Bureau of Meteorology

At the national level, there is support for the use of the CC licensing model by some public sector agencies. As noted above, the ABS commenced application of CC licences to its online materials in December 2008. In its submission to the Inquiry, the BOM indicated its intention to apply CC to some of its datasets.[201] In particular, the BOM advised the Committee of its intention to adopt the CC model as the licensing regime for the exchange and dissemination of water information across Australia. Under the *Water Act 2007*, specified persons, including state and territory governments, local governments and other relevant organisations are required to provide certain types of water information to the BOM.[202] As part of its statutory responsibilities for the management and reporting of water information, the BOM indicated that it had sought support from all jurisdictions to apply CC licences to water data.[203]

6.3.1.4 Venturous Australia

The Committee also notes support for CC in *Venturous Australia,* the final report of the Review of the National Innovation System that was released in August 2008. The Review acknowledged the opportunity for governments to promote effective information flows by "finessing the rules of the game"[204] to ensure that information they produce is widely disseminated and freely available for use and re-use, and potentially be transformed into new products. To achieve this, the report recommended that:

> Australian governments should adopt international standards of open publishing as far as possible. Material released for public information by Australian governments should be released under a creative commons licence.[205]

Upon the release of *Venturous Australia,* the Australian Government's Minister for Innovation, Industry, Science and Research, Senator the Honourable Kim Carr, indicated his support for the report, including recommendations that focused on open access and CC.[206]

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[200] Queensland Spatial Information Council, 'GILF for the nation', viewed 31 March 2009, <http://www.qsic.qld.gov.au>.
[201] Australian Bureau of Statistics, *Submission*, no. 63, 27 August 2008; Bureau of Meteorology, *Submission*, no. 17, 18 August 2008.
[202] Water Act 2007 (Cth).
[203] Bureau of Meteorology, *Submission*, no. 17, 18 August 2008, p. 7.
[204] Review of the National Innovation System, *Venturous Australia*, Cutler & Company Pty Ltd, North Melbourne, 2008, p. 81.
[205] Review of the National Innovation System, *Venturous Australia*, Cutler & Company Pty Ltd, North Melbourne, 2008, p. 95.
[206] Kim Carr, 'Review of the National Innovation System report - Venturous Australia', <http://www.melbourne.org.au/>.

On 12 May 2009, the Australian Government released its innovation policy agenda, *Powering ideas: an innovation agenda for the 21st century.*[207] In recognition that the "free flow of information fuels innovation", the Government stated it will develop a more coordinated approach to Commonwealth information management, innovation and engagement.[208]

6.3.2 Support for the application of Creative Commons to PSI

A number of witnesses supported adoption of the CC licensing model by the Victorian Government.[209] Support for CC was based on the legal robustness of its licences, as well as its high international recognition. Professor Brian Fitzgerald and Professor Anne Fitzgerald noted in their submission that while copyright statements on government websites fail to provide international benchmarking, CC licences provide universal machine readable metadata that is searchable on online search engines.[210] Over time there has been substantial uptake of CC licences internationally. While there is no definitive count of items licensed under CC, it is estimated that the figure has reached 300 million worldwide.[211]

In Australia, one of the strongest arguments for the adoption of CC by the Victorian Government, or any Australian government, is that the system is ready to use and compatible with the *Copyright Act 1968 (Cth)*:

> Today, this minute, we can stamp any government document in Victoria with a Creative Commons licence and clearly express a permission with conditions regarding moral rights and limitation of liability and so on that is internationally understood by both humans and machines.[212]

Further to this, the GILF project states:

> Creative Commons licences facilitate open access to and re-use of PSI whilst ensuring attribution of State copyright ownership of information, protection of the IP of the State, and the significant limitation of any

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[207] Department of Innovation, Industry, Science and Research, 'Powering ideas: an innovation agenda for the 21st century ', viewed 21 May 2009, <http://www.innovation.gov.au/>.
[208] Department of Innovation, Industry, Science and Research, 'Powering ideas: an innovation agenda for the 21st century ', viewed 21 May 2009, <http://www.innovation.gov.au/>, p. 57.
[209] Australian Bureau of Statistics, *Submission*, no. 63, 27 August 2008; Bureau of Meteorology, *Submission*, no. 17, 18 August 2008; Council of Australian University Librarians, *Submission*, no. 53, 22 August 2008; Creative Contingencies, *Submission*, no. 70, 5 September 2008; Cyberspace Law and Policy Centre, *Submission*, no. 68, 5 September 2008; Deakin University, *Submission*, no. 36, 22 August 2008; Brian Fitzgerald and Anne Fitzgerald, *Submission*, no. 38, 25 August 2008; La Trobe University, *Submission*, no. 49, 22 August 2008; Office of Spatial Data Management, *Submission*, no. 24, 20 August 2008; Open Source Industry Australia Ltd, *Submission*, no. 72, 5 September 2008; Red Hat Asia Pacific, *Submission*, no. 50, 22 August 2008; Scientific Writing and Consulting, *Submission*, no. 9, 9 August 2008.
[210] Brian Fitzgerald and Anne Fitzgerald, *Submission*, no. 38, 25 August 2008, p. 3.
[211] Rachel Cobcroft, *Building an Australasian Commons*, Australian Research Council Centre of Excellence for Creative Industries and Innovation, Brisbane, 2008, p. 6.
[212] Brian Fitzgerald and Anne Fitzgerald, *Submission*, no. 38, 25 August 2008, p. 5.

> potential legal liability for the State in making such information available on line.[213]

These statements draw attention to a key benefit from applying CC to PSI, which is the potential to reduce resources allocated to administration and drafting of individual licences. The use of CC may also minimise the involvement of lawyers in standard transactions, resulting in a more efficient and cost-effective licensing system.[214]

A related justification is the opportunity to establish a consistent, whole-of-government copyright policy based on CC. A whole-of-government framework would create uniformity across departments and simplify the Victorian Government's licensing processes. As noted earlier, the lack of standardised and consistent licensing mechanisms and agreements across and within Australian jurisdictions is considered a key barrier to accessing government information and data. The Committee also heard from the Australian Government's OSDM that as the community moves toward greater use of Web 2.0 technologies, there is a need to adopt "system-to-system" licensing to facilitate collaboration.[215] Commons-based agreements also work to reduce licence barriers.[216]

Advocates for CC also draw attention to the simple licensing system, which allows users to easily interpret icons and human-readable code. The common deed provides users with a clear understanding of their rights regarding re-use of material, particularly concerning which rights are reserved and to what extent.[217] The technical infrastructure that accompanies CC licences also simplifies the licensing process by ensuring reusable works are discoverable and reusable at the point of discovery. Online content licensed under CC provides automatic links to the appropriate jurisdictional CC website where the licence conditions are detailed.

Another important consideration is the level of support and use of the CC licensing model outside government. In their submission to the Inquiry, Professor Brian Fitzgerald and Professor Anne Fitzgerald claimed that CC licences are extensively used in the research sector. The Public Library of Science, for example, publishes numerous journals with individual articles available under CC. They also referred the Committee to support for CC by the Australian research sector, reflected in submissions to the Review of the National Innovation System.[218]

Segments of the Australian spatial information industry have also expressed support for the application of CC to information and data. The Australian Spatial Consortium, a forum comprising the sectors of

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[213] Rachel Cobcroft, *Building an Australasian Commons*, Australian Research Council Centre of Excellence for Creative Industries and Innovation, Brisbane, 2008, p. 134.
[214] Neale Hooper, Principal Lawyer, Office of Economic and Statistical Research, Queensland Treasury, *Transcript of evidence*, Queensland, 12 August 2008, p. 11.
[215] Office of Spatial Data Management, *Submission*, no. 24, 20 August 2008, p. 7.
[216] Office of Spatial Data Management, *Submission*, no. 24, 20 August 2008, p. 7.
[217] Ed Barker, et al., *The Common Information Environment and Creative Commons*, Common Information Environment, United Kingdom, 2005; Mierille van Eechoud and Brenda van der Wal, 'Creative Commons licensing for public sector information: Opportunities and pitfalls', viewed 22 May 2008, <http://learn.creativecommons.org>.
[218] Brian Fitzgerald and Anne Fitzgerald, *Submission*, no. 38, 25 August 2008, p. 5.

government, private, research and education, stated in its submission to the Review of the National Innovation System that it was "strongly supportive of the development of a Creative Commons approach to the provision of information."[219] The Australian Spatial Information Business Association and the Open Source Geospatial Foundation Australia-New Zealand Chapter also expressed support in their submissions to the current Inquiry for the CC licensing model.[220]

6.3.3 Alternatives to Creative Commons

Not all witnesses and submissions to the Inquiry supported CC without qualification. The Victorian Spatial Council voiced concerns about CC, claiming CC is more suitable to static spatial information that is not subject to significant change once it has been created.[221] Ms Kim Weatherall raised a similar concern in the context of databases, indicating that CC licences were not originally designed for databases, and as a consequence, the model does not consider all the things that may be done with databases, such as repeated extraction of materials.[222]

The Committee notes the complexities surrounding the protection of databases due to various instances of copyright ownership that may exist in them. Copyright can exist in the data contained in a database, as well as in the database itself. For example, while the author or creator of the data is the first owner of copyright, the author of the database who compiled the information will also own copyright.[223]

In the context of the CC licensing model, the Committee notes arguments that CC can apply to databases where one of the following elements attracts copyright:

- a set of field names identifying the data;
- a structure, which includes the organization of fields and relations among them;
- data entry sheets; and
- data.[224]

On this basis, each database element that is copyright protected can be individually licensed under CC.

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[219] Australian Spatial Consortium, *Submission*, no. 307, 30 April 2008, Review of the National Innovation System, Department of Innovation, Industry, Science and Research, p. 2.
[220] Australian Spatial Information Business Association, *Submission*, no. 78, 24 September 2008, p. 5; Open Source Geospatial Foundation Aust-NZ, *Submission*, no. 33, 2 August 2008, p. 4.
[221] Victorian Spatial Council, *Submission*, no. 41, 22 August 2008, p. 22.
[222] Kimberlee Weatherall, Senior Lecturer, TC Beirne School of Law, University of Queensland, *Transcript of evidence*, Queensland, 12 August 2008, p. 4.
[223] Anne Fitzgerald and Kylie Pappalardo, *Building the infrastructure for data access and reuse in collaborative research*, Queensland University of Technology, Brisbane, 2007, p. 139.
[224] Anne Fitzgerald and Kylie Pappalardo, *Building the infrastructure for data access and reuse in collaborative research*, Queensland University of Technology, Brisbane, 2007, p. 149.

In the Inquiry's discussion paper, the Committee referred to the possibility of the Victorian Government developing its own suite of licences as part of an overarching policy for a whole-of-government licensing framework. The Committee suggested this could form an alternative to the CC licensing model. The Committee noted that a suite of licences could draw on principles of open access but also include conditions tailored to the specific purposes of government.

In its submission, the Intellectual Property Research Institute of Australia (IPRIA) indicated its support for this option, advising the Committee that its own research into open content licences concluded that the CC licensing model should not be adopted as the sole framework for governing the distribution of PSI. IPRIA suggested that the simplicity of the four basic variables attached to CC licences – the nature of the use; the potential requirement for attribution; the capacity for derivative works to be produced and the terms that attach to the distribution of derivative works – meant that it would not be appropriate to release some PSI under a CC licence. IPRIA also stated, however, that its research did not reveal any evidence that CC is inappropriate for application to PSI – rather, there is limited evidence to confirm the effectiveness of CC licences in the public sector, given the relatively recent take up of these licences by governments.[225]

The University of Melbourne also claimed in its submission that it may be feasible for the Victorian Government to develop its own licensing framework, including "template licences that can be easily applied to different types, uses and relationships between creator, custodian and end-users of the licenced information."[226] It suggested that licences could include options for payment of fees or royalties, particularly when PSI is used for commercial purposes.[227] The Committee notes, however, that licensing material under CC does not prevent the Victorian Government from using the material for commercial purposes. Because all CC licences are non-exclusive, licensors can allow others to use the materials according to the licence conditions and at the same time enter into a separate non-exclusive licence with other licensees, potentially in exchange for money.[228]

The Inquiry's discussion paper also noted that other open content licensing models had been established due to CC not accommodating certain licence conditions. One example is the Creative Archive licence, which was developed because geographical restrictions were not possible under CC licences. Responses to question 13 of the discussion paper, which asked whether the absence of such a condition in CC is likely to be an issue for Victorian PSI, indicated that there is limited value in this type of condition. The CLPC stated in its submission to the Inquiry:

> There is no value in geographical restrictions in commons licences. It is of as much value to Victorians to be able to use Western Australian or British Columbian PSI as it is for residents of those jurisdictions to use Victorian

[225] Intellectual Property Research Institute of Australia, *Submission*, no. 57, 29 August 2008, p. 10.
[226] University of Melbourne, *Submission*, no. 34, 22 August 2008, p. 9.
[227] University of Melbourne, *Submission*, no. 34, 22 August 2008, p. 9.
[228] CC Wiki, 'Frequently asked questions', viewed 17 February 2009, <http://wiki.creativecommons.org>.

> PSI. Such 'public rights' are of most value to everyone when they are part of as broad a global system of re-use as possible. Victoria needs to play its part in creating both Australia-wide and global information commons.[229]

Similarly, Ms Kim Weatherall stated the following in her presentation to the Committee:

> Do not think about geographical restrictions… there is just no way you can realistically impose geographical restrictions, and you would not want to. Anyone using Victorian data is likely to be either offering services to Victoria or making your information environment more rich. You want people in New South Wales to be using your data, trust me.[230]

Finding 14: The application of geographical restrictions to public sector information (PSI) licences will be difficult to enforce and may compromise the re-use value of government PSI.

Aside from geographical restrictions, the discussion paper also noted that the CC licences do not include a "no endorsement or derogatory use" condition. Since the release of the paper in July 2008, the international branch of CC commenced development of version 3.0 of its licences, which incorporates a "no endorsement" clause. According to CC, a licensee should not interpret the attribution requirement of the CC licences (whether intentionally or not) to misrepresent the nature of the relationship with the licensor.[231] The Australian branch of CC is currently seeking feedback on its 3.0 licences. In the draft version of the Attribution-Non-Commercial-Share-Alike licence, it states that licences must not:

> [A]ssert or imply any connection with, sponsorship of or endorsement by the Original Author or Licensor of You or Your Use of the Work, without their separate, express prior written permission.[232]

While there was some support for the development of Victorian Government specific licences, a number of witnesses expressed concern about the Victorian Government developing its own licensing framework. The CLPC claimed there are few advantages in the Victorian Government adopting its own licensing framework. The IPRIA, which expressed support for the development of a tailored suite of licences, also noted that costs associated with the development of licences would likely be in excess of the costs associated with adopting CC across the public sector.[233]

Drawing on the experiences of the open source community, Red Hat Asia Pacific also recommended that the Victorian Government not attempt to develop a new suite of licences:

> The open content community can profit from the experience of the open source community. Open source has struggled against the historical

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[229] Cyberspace Law and Policy Centre, *Submission*, no. 68, 5 September 2008, p. 3.
[230] Kimberlee Weatherall, Senior Lecturer, TC Beirne School of Law, University of Queensland, *Transcript of evidence*, Queensland, 12 August 2008, p. 8.
[231] Creative Commons, 'Creative Commons version 3.0 - A brief explanation', viewed 17 February 2009, <http://wiki.creativecommons.org/>.
[232] Creative Commons Australia, 'Attribution-Non-Commercial-Share-Alike 3.0 Australia', viewed 16 February 2009, <http://creativecommons.org.au/>.
[233] Intellectual Property Research Institute of Australia, *Submission*, no. 57, 29 August 2008, p. 10.

> problem of 'licence proliferation'. It is widely accepted in the open source world that there are too many licences in active use; many of these licences were designed for use by a particular organisation or a particular work of software. The current trend in open source licensing is towards reduction and standardisation of licence choices. We think that use of well-known open content licences, particularly those of Creative Commons, will encourage wider use of released PSI.[234]

The Committee recognises arguments in favour of the Victorian Government developing a tailored suite of licences. However, the Committee is also aware that the adoption of the CC licensing model will achieve similar benefits without requiring the allocation of considerable resources to develop a new licensing system. The CC model will greatly increase licence simplicity across the Victorian Government, and thereby enhance the opportunities for its information and data to be easily accessed and re-used by the public and private sectors, the community and other government agencies. Should the CC licences be more widely adopted outside government, familiarity with the terms of the licences would also position the Victorian Government to take advantage of outside information and data.

The fact that jurisdictions both within and outside Australia are also making use of CC licences is a powerful argument in favour of their application to Victorian PSI. The Committee is cognisant that moves by the Australian Government in particular toward the adoption of CC licences creates a strong argument in favour of CC, particularly given the preference for inter-jurisdictional harmonisation of administrative arrangements.

Toward this end, the Committee considers the CC licensing model to be the most suitable for adoption as the default licensing system for the proposed IMF. It works within the *Copyright Act 1968* and will provide the Victorian Government with a flexible set of legal right options when disseminating and allowing the re-use of its materials.

Recommendation 14: That the Victorian Government adopt the Creative Commons licensing model as the default licensing system for the Information Management Framework.

6.3.4 A combined approach

As noted earlier, CC licences will not be appropriate for all information and data produced and held by the Victorian Government. As noted above, Queensland Government's GILF project determined that although CC licences would be appropriate for 85 per cent of PSI, the remaining 15 per cent should have restricted access because of privacy, statutory constraints, confidentiality and security classifications. It was also determined that CC licences are not suitable for use in circumstances where rights to access and use data are given as part of high-value commercial transactions. Such transactions are considered outside the scope of the CC philosophy and licence structure.[235] To accommodate this, the GILF toolkit includes the standard CC licences, in addition to limited

[234] Red Hat Asia Pacific, *Submission*, no. 50, 22 August 2008, p. 2.
[235] Queensland Spatial Information Council, 'Stage 2 - A government information open access and use strategy', viewed 28 March 2008, <www.qsic.qld.gov.au>, p. 19.

standard restrictive templates that allow licensors to customise licences according to their requirements.

Deakin University supports the adoption of what it terms a "hybrid model" by the Victorian Government, the key benefit of which is to facilitate access to a high proportion of government information and data, while providing governments with appropriate control over confidential information and/or information that is deemed to have high commercial value.[236] The Committee also supports this view.

Consequently, the Committee considers it necessary that the IMF comprise an additional suite of licences to apply to restricted materials and in instances where negotiation is required between the Victorian Government and potential licensees.

Recommendation 15: That the Victorian Government adopt a hybrid public sector information licensing model comprising Creative Commons and a tailored suite of licences for restricted materials.

6.3.5 Which rights reserved?

Advocates for open access to PSI argue that a key benefit of improved accessibility and reusability of PSI is that it will greatly enhance innovation and creativity throughout society, with potentially substantial benefits in both commercial and non-commercial applications. In support of this view and to achieve these objectives, the Committee is aware that the licensing terms for re-use should be as non-restrictive as possible.

While some witnesses suggested that the "commercial", "non-restrictive" and "non-discriminatory" licensing conditions were most appropriate for PSI, others regarded best practice to consist of applying minimum conditions to the use of PSI. Red Hat Asia Pacific, for example, reflected on the need for a more relaxed approach to the licensing of PSI:

> Red Hat believes that, at a minimum, an open content licence should permit unlimited copying and distribution, without any restrictions on commercial use (or, indeed, any other form of use or purpose restriction)... As noted above, we recommend a default position of permitting modification and imposing share-alike requirement, with the exceptions for certain categories of works (for example, works expressing opinion should not necessarily be modifiable). The default licence choice should be CC-BY-SA, which is especially appropriate for informational and reference material.[237]

When considering the application of specific CC licence conditions to Victorian Government information and data, the Committee notes that while it may be appropriate to place a non-derivative works condition on some government materials, such as legislation and regulations, the use of this condition should be kept to a minimum. Similarly, the Committee believes the use of the non-commercial licence condition should be limited in order to maximise subsequent use of PSI.

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[236] Deakin University, *Submission*, no. 36, 22 August 2008, p. 13.
[237] Red Hat Asia Pacific, *Submission*, no. 50, 22 August 2008, p. 3.

The licence condition the Committee believes should be commonly applied to Victorian Government PSI is "attribution". This condition will help preserve the integrity of Victorian Government PSI and provide potential licensees with reassurance of quality. This is the core licence condition that the ABS has placed on its website content so that "people are free to re-use, build upon and distribute our data, even commercially."[238] The BOM also intends to apply the attribution only condition to water information and data.[239]

In presenting evidence to the Committee, Professor Richard Jefferson spoke of the importance of licensing PSI under the CC attribution licence:

> The advantage of Creative Commons that I think is quite exciting, especially for smaller or regional governments – and in the global economy Victoria qualifies as a regional economy and government – is attribution. One of the most powerful tools for quality control and for ensuring that there is a relevance to the data collection mechanisms and activities and the human beings who do it, is the attribution component of Creative Commons. One of the true embedded geniuses of Creative Commons is the ability, with a single sticker, to provide a full and comprehensive ability to use the data, with the caveat that one gives proper attribution for its use. That alone ensures that the primacy of the taxpayer, for instance in Victoria, for having funded the acquisition of that is recognised and accredited, that the quality of the data or its lack thereof, is associated with its providence, in this case Victoria.[240]

The Committee does not intend to prescribe licensing conditions that the Victorian Government should apply to PSI. However, it does wish to affirm its strong support for the use of licence conditions that will allow the Government to manage its information and data in a manner that facilitates information and knowledge flows, and experimentation with existing knowledge. The Committee believes the information-oriented environment this will create in Victoria will spur economic growth and productivity through the development of, and investment in, new products and other commercial activities.

Finding 15: Issuing attribution-only Creative Commons licences will assist to maintain the integrity of Victorian Government public sector information while ensuring access and re-use opportunities are maximised.

[238] Australian Bureau of Statistics, 'Creative Commons licensing is coming to the ABS!' viewed 4 February 2009, <http://www.abs.gov.au/>.
[239] Bureau of Meteorology, *Submission*, no. 17, 18 August 2008, p. 7.
[240] Prof Richard Jefferson, CEO, CAMBIA, *Transcript of evidence*, Canberra, 13 August 2008, p. 3.

Chapter Seven: Key points

- Four commonly cited models for the pricing of PSI are no cost (where the price is zero), marginal cost (where price is the cost of supplying the information to an extra user), cost recovery (where the price is determined with regard to all costs attributed to data production), and profit maximisation (where profits are returned by allocating prices above the cost of data production). The latter model is rarely employed by governments.

- In economic theory, the rationale for government participation in the production of information and data is to address market failures or to achieve social and economic benefits that would not otherwise be delivered.

- Where the production of information and data by government is conducted in order to undertake core government functions, the appropriate pricing model should be the application of no or marginal costs.

- A shift in the Victorian Government's pricing policy from cost recovery to no cost or marginal costs is likely to create further opportunities for the community and private sectors to re-use and redistribute value-added information and data.

Chapter 7

Chapter Seven: Pricing public sector information

An important consideration during the release of public sector information (PSI) is to determine whether a fee should be charged for access and re-use. Determining the appropriate model for pricing PSI is an important issue for the Inquiry and one which the Committee believes will be a key challenge for the development and implementation of the proposed Information Management Framework (IMF). The Committee has recommended in previous Chapters that open access to PSI be the default position of the Victorian Government. In the Committee's view, the most appropriate pricing policy for open access to online PSI is to provide it at no cost. Where hard copies of PSI are required, charging users marginal costs (for example, for printing and postage) will generally be the most appropriate pricing policy.

The Committee has identified four main pricing models applicable to PSI. These are:

- no cost: setting prices at zero;
- marginal cost: setting prices equal to the short-run marginal cost, that is the cost of supplying the data to an extra user.[241] In the digital context, this cost is typically zero;
- cost recovery: setting prices equal to average long-run costs, which includes all costs attributed to data production[242]; and
- profit maximising: setting prices to maximise profit for the public sector agency through attaching prices above the costs of data production.[243]

The Committee notes that in practice, the difference between no cost and marginal cost models is often negligible.[244] The practice of profit maximising is relatively rare among governments, and is not ordinarily endorsed under the current Victorian Government *Cost recovery guidelines*. For this reason, the Committee does not anticipate a role for profit maximisation through the sale of Victorian Government PSI, and does not consider this model in this Chapter.

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[241] Rufus Pollock, *The economics of public sector information*, University of Cambridge, Cambridge, 2008, p. 9.
[242] Rufus Pollock, *The economics of public sector information*, University of Cambridge, Cambridge, 2008, p. 8.
[243] Rufus Pollock, *The economics of public sector information*, University of Cambridge, Cambridge, 2008, p. 8.
[244] See also David Newbery, et al., *Models of public sector information provision via trading funds*, Department for Business, Enterprise and Regulatory Reform and HM Treasury, London, 2008.

This Chapter principally examines the remaining three models, and considers which model maximises the economic and social benefits of PSI. The Committee draws extensively from the Productivity Commission's 2001 report *Cost recovery by government agencies,* which reviewed cost recovery arrangements across the Australian Government's regulatory, administrative and information agencies, and also developed guidelines for the future application of cost recovery.[245] Many of the Productivity Commission's findings and recommendations are relevant to this Inquiry.

This Chapter also examines the role of governments enhancing the value of PSI. At a practical level, the no cost and marginal cost models encourage governments to make data available for others to re-use and redistribute as they wish. The cost recovery model, on the other hand, is associated with governments retaining strong control over the re-use and distribution of data. This issue raises questions about the appropriateness of governments acting as commercial entities, and whether the private sector is better placed to enhance the value of PSI.

7.1 Victorian Government PSI revenue and pricing

In its call for submissions for this Inquiry, the Committee sent letters to ministers and departments of the Victorian Government, and to statutory authorities and corporations in Victoria, requesting responses to the following questions:

- If revenue is currently obtained from the sale or provision of PSI, please specify the amount received?
- How many revenue-raising PSI products are sold? Please indicate the types of products available for purchase, including specific examples.
- How many customers purchase PSI? Please indicate the types of customers who purchase these products.
- How are the licensing conditions under which PSI is sold or provided determined?
- Have you identified any examples of PSI being used for commercial purposes by an external party? If so, do you wish to provide any comments on this?

The Victorian Government provided an aggregated response to these questions, incorporating information from all Government departments except for the Department of Human Services, the Department of Transport, the Department of Treasury and Finance, and the Department of Education and Early Childhood Development. The Committee has summarised the information on revenue provided by the Victorian Government below, but notes that this information is partial due to exclusion of the departments mentioned above.

[245] Productivity Commission, *Cost recovery by Government*, Commonwealth of Australia, Canberra, 2001.

Table 1: Total PSI revenue, selected Victorian Government departments, 2008.[246]

Department	Branch	Description	PSI
DIIRD	Information Victoria / Tourism Victoria	Book sales, image licences	$ 1,060,000
DPC		Copyright Agency Ltd returns	$ 55,000
	Office of the Chief Parliamentary Counsel	Royalties from sale of hard copy legislation	$ 286,111
		Licences for limited reprints of legislation	$ 990
		Unrestricted licences for publishing legislation (5 licences at $13860)	$ 58,025
	Public Records Office of Victoria	Copies public records	$ 81,462
		Training and seminars	$ 14,948
		In-Kind	$ 37,600
	State Library of Victoria	Books and publications, interlibrary fees, reproductions	$ 179,000
	Museum Victoria	Images	$ 25,000
		Publication	$ 75,000
		Planetarium Shows	$ 25,000
		3D Animation content	$ 30,000
DPI		Postage and handling for PSI	$ 20,000
		Book sales	$ 20,000
DSE		Spatial information products	$ 4,055,000
DoJ	Victorian Government Reporting Service	Legal proceeding transcripts (statutory fees)	$ 89,110
	Liquor Licensing Victoria	Publication sales (breakdown unavailable)	$ 416,986
	Office of the Public Advocate	Presentation fees	$ 12,427
	Births Deaths and Marriages	Certificate fees (statutory fees), general publications	$ 1,960,000
		Judgements sold for republishing	$ 154,869
DPCD	Heritage Victoria	Heritage Certificates	$ 250,000
	Planning and Policy reform	Planning certificates, map data, historical data	$ 570,000
TOTAL			$ 9,476,528

The Victorian Government currently provides a wide range of PSI to interests outside the public sector for various reasons. The Committee noted statements from a number of departments that they provide PSI at no cost to outside interests in order to stimulate commercial activity, provide raw data for research, or to fulfil a public service. In particular, the

[246] Government of Victoria, *Submission*, no. 80, 27 November 2008.

Department of Primary Industries (DPI) and the Department of Justice (DoJ) provide some PSI products at no or low price for these purposes. The Committee commends the actions of these and other departments in making PSI available for these purposes.

The Committee notes that fees and prices for some of the PSI provided by the Victorian Government is determined by statute, so that any modification to prices for these products must be obtained through the appropriate legal instrument, if change is desired. Examples of this include fees for births, marriages and deaths certificates, which are specified by the *Births, Deaths and Marriages Registration Regulations 2008*, fees for transcripts of legal proceedings, specified by the *Evidence (Transcript Fees) Regulations 2006*, and heritage certificate fees, defined by the *Heritage (General) Regulations 2005*.

7.2 The economic role of public sector information

When considering the appropriate pricing model to apply to PSI, it is important to consider economic characteristics of PSI, including the economic rationale for government involvement in the provision of information.

7.2.1 Market failures

One justification for the provision of information by governments is to overcome market failures, which occur when a market left to itself does not allocate resources efficiently.[247] Two key failures that justify government intervention in the information market concern the failure of the private sector to adequately provide public goods and the failure to account for externalities (or "spill-over") effects from market transactions.

7.2.1.1 Public goods

Public goods can be described as those goods where provision to one person means that the product is available to all people at no additional cost.[248] Key characteristics of public goods are that they are non-rivalrous (that is, consumption by one person will not diminish consumption by others) and non-excludable (that is, it is difficult to exclude anyone from benefiting from the good).[249]

Public goods are not typically supplied by the private sector or, if so, they are supplied in insufficient quality. This is because the goods cannot be provided exclusively to paying customers and non-paying customers cannot be prevented from benefiting from them.[250] According to the Productivity Commission, if it is economically feasible and profitable to identify and charge consumers and to exclude non-purchasers, then a

[247] Better Regulation Office, *Guide to better regulation*, NSW Department of Premier and Cabinet, Sydney, 2008, p. 39.
[248] Kirsti Nilsen, *Economic theory as it applies to statistics Canada: A review of the literature*, Statistics Canada, Toronto, 2007, p. 5.
[249] Productivity Commission, *Cost recovery by Government*, Commonwealth of Australia, Canberra, 2001, p. 22.
[250] Kirsti Nilsen, *Economic theory as it applies to statistics Canada: A review of the literature*, Statistics Canada, Toronto, 2007, p. 5.

private market will normally develop.[251] If not, it is appropriate that government provide the public goods.

7.2.1.2 Externalities

According to the economist, Professor Joseph Stiglitz, externalities or spill over effects occur whenever an action by an individual or firm has an effect on another individual or firm for which the latter does not pay or is not paid."[252] Externalities can be either positive (benefit) or negative (cost), however, their existence can often result in the production or consumption of more or less products or services than is economically efficient.[253] Governments have a role in minimising negative externalities and promoting positive externalities, as the private sector tends to under-produce goods with positive externalities and over-produce goods with negative externalities.[254] Information products are considered to produce significant positive spill over effects.[255]

Finding 16: It is appropriate for governments to provide information products to address market failures, and ensure the delivery of social and economic benefits that would not otherwise be provided by the private sector.

7.3 No cost and marginal cost pricing models

No cost and marginal cost pricing models require that PSI is priced at either zero or marginal costs for dissemination. The underlying principle of this model is that most PSI is an administrative by-product that is developed and collected by governments as part of core business activities and consequently, are typically funded from general taxation revenue.[256] This type of information is often referred to as fundamental data, in that it can only be collected by governments, and would be collected regardless of whether it can be re-used or resold to external sectors. Consequently, fixed costs for creating and maintaining the data are incurred irrespective of whether resale or re-use is permitted.[257]

7.3.1 Australia

In July 2005, the Australian Government released its *Cost recovery guidelines* to improve the consistency and transparency of its cost recovery arrangements and promote the efficient allocation of resources. The Guidelines draw on a number of key principles, including that:

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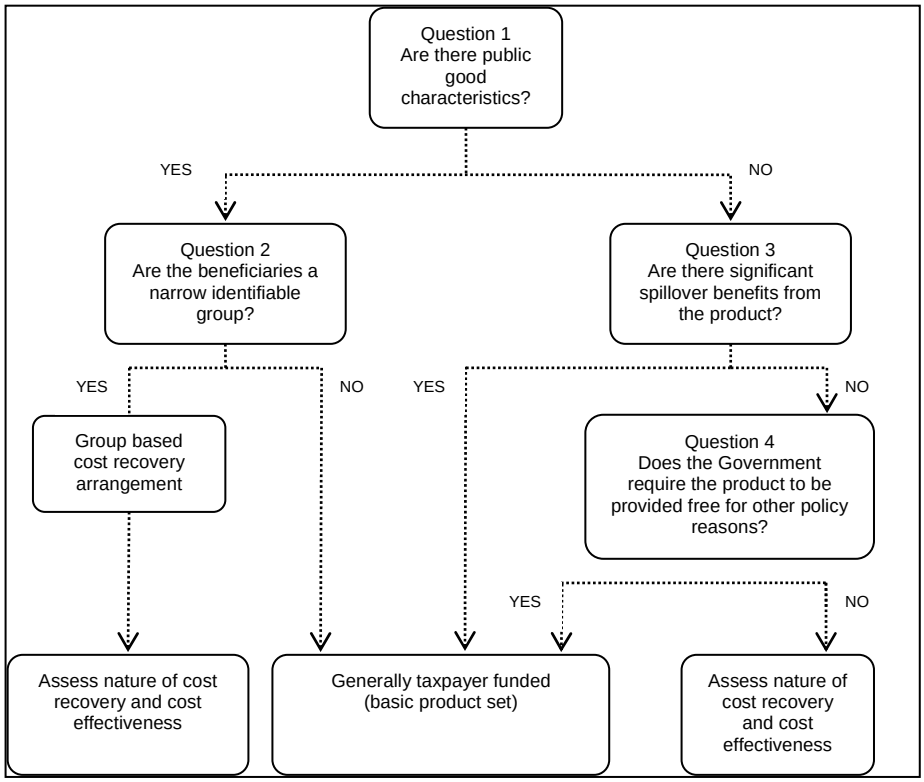
[251] Productivity Commission, *Cost recovery by Government*, Commonwealth of Australia, Canberra, 2001, p. 13.
[252] Joseph E Stiglitz, *Economics of the public sector*, W.W. Norton, New York, 2000. in Kirsti Nilsen, *Economic theory as it applies to statistics Canada: A review of the literature*, Statistics Canada, Toronto, 2007.
[253] Better Regulation Office, *Guide to better regulation*, NSW Department of Premier and Cabinet, Sydney, 2008, p. 39.
[254] Joseph E Stiglitz, et al., *The role of government in a digital age*, Computer and Communications Industry Association, 2000, p. 33.
[255] Productivity Commission, *Cost recovery by Government*, Commonwealth of Australia, Canberra, 2001, p. 23.
[256] Alan Smart, Senior Consultant and Marketing Director, ACIL Tasman, *Transcript of evidence*, Melbourne, 27 October 2008, p. 8.
[257] Oxera, 'Public information, private profit: how should government agencies compete?' *Agenda*, 2005, p. 2.

- cost recovery should not be applied where it is not cost effective, where it is inconsistent with government policy objectives or where it would unduly stifle competition or industry innovation; and
- products and services funded through the budget process form an agency's "basic information product set" and should not be cost recovered. Commercial, additional and incremental products and services that are not funded through the budget process fall outside of an agency's basic product set and may be appropriate to cost recover.[258]

While the Australian Government Guidelines are not concerned exclusively with no cost or marginal cost provision of information and services, they do acknowledge circumstances when it is appropriate to attach no cost or marginal cost to an information product.[259]

These Guidelines include a clear and simple flowchart to assist public sector agencies determine how information products and services should be funded (see Figure 1). The flowchart includes questions about the public good characteristics of information products, including consideration of whether beneficiaries are a small identifiable group (rivalrous), and whether the product has significant spill over effects. In circumstances when an information product has public good characteristics and/or significant spill over benefits, the Guidelines indicate that the product be funded through general taxation.

Figure 1: Assessing funding for information products[260]



[258] Department of Finance and Administration, *Australian Government cost recovery guidelines*, Commonwealth of Australia, Barton, 2005, pp. 2-3.
[259] Department of Finance and Administration, *Australian Government cost recovery guidelines*, Commonwealth of Australia, Barton, 2005, p. 30.
[260] Department of Finance and Administration, *Australian Government cost recovery guidelines*, Commonwealth of Australia, Barton, 2005, p. 31.

Another pricing guidance document is the Australian Government's *Policy on spatial data access and pricing*, which is managed by the Office for Spatial Data and Management (OSDM). The policy states that fundamental spatial data will be provided:

- free of charge over the internet; or
- at no more than the marginal cost of transfer for packaged products; or
- at the full cost of transfer for customised services.[261]

Similarly, the Australian Bureau of Statistics' (ABS) pricing policy details three bases for setting prices:

- pricing based on marginal costs for the additional dissemination of the basic information set;
- pricing based on incremental costs for products and services additional to the basic information set; and
- "commercial" pricing based on competitive neutrality principles, for products and services that could compete with similar products provided by the private sector.[262]

While the premise for the OSDM and ABS's pricing strategies is based on no costs or marginal costs, each strategy allows for the recovery of costs when the provision of a product or service is outside the basic information set and as a consequence is not funded through general taxation.

7.3.2 International

The United States (US) federal government provides for access to and re-use of PSI at no cost or marginal cost. Policies surrounding the management of federal government information in the US are explicitly described in the Office of Management and Budget Circular A-130.[263] Some of the key assumptions and arguments enunciated in Circular A-130 pertaining to PSI access include:

> b. Government information is a valuable national resource. It provides the public with knowledge of the government, society, and economy -- past, present, and future. It is a means to ensure the accountability of government, to manage the government's operations, to maintain the healthy performance of the economy, and is itself a commodity in the marketplace.[264]

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[261] Office of Spatial Data Management, 'Australian Government policy on spatial data access and pricing', viewed 6 May 2008, <http://www-ext.osdm.gov.au>.
[262] Australian Bureau of Statistics, 'ABS Pricing Policy', viewed 23 July 2008, <http://www.abs.gov.au/>.
[263] Circulars are instructions or information issued by the Office of Management and Budget to Federal agencies.
[264] Office of Management and Budget, *Management of Federal Information Resources*, Washington DC, Circular A-130, Rev 4., 1996, p. 7a.

> c. The free flow of information between the government and the public is essential to a democratic society. It is also essential that the government minimize the Federal paperwork burden on the public, minimize the cost of its information activities, and maximize the usefulness of government information.[265]
>
> d. In order to minimize the cost and maximize the usefulness of government information, the expected public and private benefits derived from government information should exceed the public and private costs of the information, recognizing that the benefits to be derived from government information may not always be quantifiable.[266]

The Circular requires agencies within the federal government to only collect or create information that is necessary for those agencies to perform their core functions and which has practical utility.[267] Furthermore, agencies are to avoid establishing restricted, exclusive or other arrangements that interfere with the equitable and timely provision of information products, and are to avoid establishing fees or royalties on "the reuse, sale, or re-dissemination of federal information dissemination products by the public."[268] Circular A-130 also requires that user charges for information dissemination products must be set "at a level sufficient to recover the cost of dissemination but no higher", except in the following circumstances:

> (i) Where statutory requirements are at variance with the policy;
>
> (ii) Where the agency collects, processes, and disseminates the information for the benefit of a specific identifiable group beyond the benefit to the general public;
>
> (iii) Where the agency plans to establish user charges at less than cost of dissemination because of a determination that higher charges would constitute a significant barrier to properly performing the agency's functions, including reaching members of the public whom the agency has a responsibility to inform; or
>
> (iv) Where the Director of OMB determines an exception is warranted.[269]

This approach to PSI management promotes the broad dissemination of government materials and facilitates extensive re-use of those materials. Because this policy does not allow the federal government to differentiate between general and commercial access to and re-use of PSI, an equal level of access is ensured across the private and community sectors.

The absence of copyright at federal level in the US does not extend to the states which are still able to exert copyright on materials they produce. In practice, however, similar principles of access to PSI are employed at state level as apply at federal level. While taxpayers typically fund most PSI at

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[265] Office of Management and Budget, *Management of Federal Information Resources*, Washington DC, Circular A-130, Rev 4., 1996, p. 7b.
[266] Office of Management and Budget, *Management of Federal Information Resources*, Washington DC, Circular A-130, Rev 4., 1996, p. 7c.
[267] Office of Management and Budget, *Management of Federal Information Resources*, Washington DC, Circular A-130, Rev 4., 1996, p. 8a2.
[268] Office of Management and Budget, *Management of Federal Information Resources*, Washington DC, Circular A-130, Rev 4., 1996, pp. 8a7a-8a7b.
[269] Office of Management and Budget, *Management of Federal Information Resources*, Washington DC, Circular A-130, Rev 4., 1996, p. 8a7c.

the federal level in the US, there is relatively little activity by government agencies in value-added PSI products. As a consequence a greater role is played by the private sector in the use and dissemination of PSI to the public, and in theory, return to the government is derived principally from tax receipts generated as a result of private sector commercial activity.[270]

7.4 Cost recovery pricing model

The cost recovery model requires that governments recover some or all the costs associated with a particular service or product. According to the Productivity Commission, cost recovery charges typically fall into two categories:

1. fees – fees for the provision of goods and services and royalties; and

2. taxes – levies, excises and customs duties.

Cost recovery is considered to serve the following purposes:

- provide incentives to improve the efficiency of government service provision;

- influence demand for government goods and services;

- provide resources for government agencies additional to those resources available from general taxation revenue; or

- improve the equity of the distribution of the costs of government activities.[271]

7.4.1 Victoria

Cost recovery is currently the core pricing strategy of the Victorian Government as outlined in its *Cost recovery guidelines (Incorporating the information formerly published in the Guidelines for setting fees and user-charges imposed by departments and general government agencies).* The Guidelines state that the general government policy is for regulatory fees and user charges to be set at full cost recovery. According to the policy, this meets efficiency and equity objectives for the following reasons:

- it promotes the efficient allocation of resources by sending appropriate price signals about the value of all the resources being used in the provision of government goods and services; and

- it ensures those who have benefited from government-provided goods and services pay the associated costs. Those parties that do not benefit do not have to bear the costs.[272]

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[270] Office of Fair Trading, *The commercial use of public information*, UK Government, London, 2006, p. 56.
[271] Productivity Commission, *Cost recovery by Government*, Commonwealth of Australia, Canberra, 2001, p. 1.
[272] Department of Treasury and Finance, *Cost recovery guidelines*, State of Victoria, Melbourne, 2007, p. 6.

The Guidelines also state that there may be circumstances when it is desirable to recover less than full costs, or not to recover costs at all. Circumstances when cost recovery is not exercised include:

- where merit goods are provided or where activities generate benefits to unrelated third parties (also referred to as positive externalities). Merit goods are those that may be under-consumed if they are priced at full cost (e.g. education);

- where objectives for income redistribution or social insurance are important. In these circumstances, the pursuit of social policy considerations outweigh the efficiency arguments associated with full cost pricing;

- where concessions are deemed appropriate in order to maximise access of certain groups to the good or service. As above, social policy considerations may be relevant here;

- where full cost recovery may undermine innovation and product development. High costs for government-owned goods and services or regulatory approvals may deter new companies or products from entering the market, acting as a disincentive to innovation;

- where the government is providing goods and services on a commercial basis in competition with the private sector. In these circumstances, charges may be set at the commercial market price, and potentially above full cost recovery. The principle of competitive neutrality may apply[273]; and

- where full cost charging could undermine other objectives, including the very purpose of the government activity.[274]

The Committee notes that the Guidelines can be applied to the pricing of PSI but do not specifically consider government-owned information products. Due to growing interest in the re-use of PSI, the Committee believes there is merit in the Victorian Government developing pricing guidelines specifically for the provision of information products. This will ensure Victorian Government PSI is priced appropriately, with an emphasis on the provision of PSI at no cost or marginal cost.

Recommendation 16: That the Victorian Government develop specific guidelines for the pricing of public sector information (PSI), emphasising the provision of PSI at no cost or marginal cost.

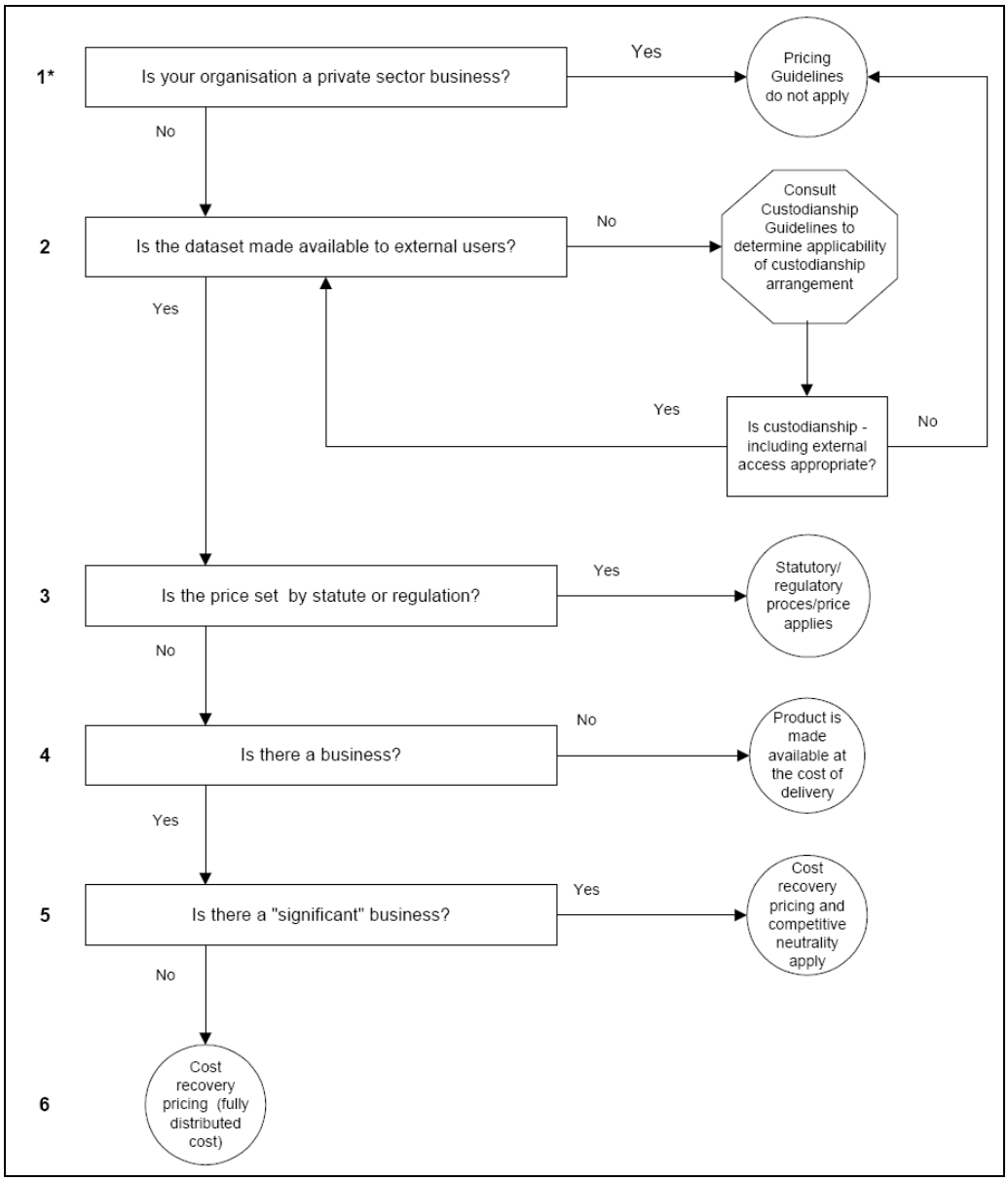
[273] The competitive neutrality policy was introduced to all Australian jurisdictions in 1996 as part of the Competition Principles Agreement. The policy was established in recognition that governments and private businesses often coexist in the marketplace but not always on equal terms. Competitive neutrality requires government businesses to adjust their prices to reflect the unique status of public ownership, with the intention of neutralising any inequalities in order to allow governments to undertake business activities on a fair and equitable basis.

[274] Department of Treasury and Finance, *Cost recovery guidelines*, State of Victoria, Melbourne, 2007, p. 21.

7.4.1.1 Victorian spatial information industry

The Victorian spatial information industry has incorporated the Victorian Government's Guidelines into its own pricing strategy, the *Spatial information pricing and licensing guidelines for Victoria*. The spatial guidelines were developed to assist custodians of Victorian Government spatial data determine prices for spatial services and products. Figure 2 is a decision tree from the guidelines to assist this process. It is not intended for use by the private sector.

Figure 2: Decision tree for determining a pricing approach for spatial products and services[275]



According to the Victorian Spatial Council (VSC), the spatial guidelines draw on the two principles to encourage the use of spatial data:

[275] Victorian Spatial Council, *Spatial information pricing and licensing guidelines for Victoria*, Department of Sustainability and Environment, East Melbourne, 2006, p. 14.

- prices should not be an impediment to use; and
- revenue obtained from distributing spatial data should be used to maintain and develop it to the required standards.[276]

In 2007-08, revenue generated from licensing Victorian Government spatial data was $4.05 million. The Chair of the VSC, Mr Olaf Hedberg, advised the Committee that 40 per cent of the recovered costs are allocated to maintaining information and data, with the other 60 per cent funded out of consolidated revenue.[277]

7.4.2 International

Various Member States of the European Union (EU) have adopted cost recovery as their key pricing model. Prior to the introduction of the EU *Directive on the re-use of PSI*, a number of Member States viewed PSI as an asset to be exploited by the public sector, and considered the commercial exploitation of PSI a welcome revenue stream. The Directive was introduced in order to harmonise access policies across Member States, and reduce the practice of commercialisation by public sector agencies. On the issue of pricing PSI, article six of the Directive states:

> Where charges are made, the total income from supplying and allowing re-use of documents shall not exceed the cost of collection, production, reproduction and dissemination, together with a reasonable return on investment. Charges should be cost-oriented over the appropriate accounting period and calculated in line with the accounting principles applicable to the public sector bodies involved.[278]

According to Epsiplus, a network established to support the implementation of the EU Directive, at the time of drafting the Directive the wording of article six did not include the statement "with a reasonable return on investment." This text was later inserted by the European Commission who decided to adopt a pragmatic approach in recognition that a small number of Member States would not change their existing commercial or self-financing activities.[279] Consequently, the Directive provides Member States with the discretion to profit from the re-sale of PSI.

The United Kingdom (UK) has adopted a cost recovery policy for some of its PSI, although the Government concedes that its access policy includes a range of pricing models. In the context of its commercial activities, under the *Trading Funds Act 1973*, certain government departments and executive agencies are established as Trading Funds, which requires them to be self-sufficient by selling data and services to provide a return to the

[276] Victorian Spatial Council, *Submission*, no. 41, 22 August 2008, p. 18.
[277] Olaf Hedberg, Independent Chair, Victorian Spatial Council, *Transcript of evidence*, Melbourne, 27 October 2008, p. 3.
[278] European Commission, 'Directive 2003/98/EC of the European Parliament and of the Council of 17 November 2003 on the re-use of public sector information', *Official Journal of the European Union*, 2003.
[279] Epsiplus, 'Pricing of PSI - is the pendulum swinging?' viewed 20 February 2009, <http://www.epsiplus.net>.

UK Treasury.[280] One example is the Ordnance Survey, which is Britain's national mapping agency and is financed through data licensing rather than direct funding from general taxation revenue. Recently, there has been discussion of a potential shift in the Trading Funds' pricing model. This is discussed further in section 7.5.3.2.

7.5 The application of no cost, marginal cost and cost recovery to PSI

A key issue for government when determining access conditions for PSI is the development of appropriate pricing models. As noted above, the current core pricing strategy for the Victorian Government is cost recovery. An important consideration for the Committee during this Inquiry is to determine whether the Government's cost recovery policy is consistent with the Committee's recommendation that open access to PSI be promoted by Government.

The Committee expects that most PSI released under the IMF will be information and data obtained by Government in order to fulfil its core functions and policy objectives, and as such, is information that will be generated whether or not there is any market for it. In this context, it is appropriate to consider what pricing model should be applied to PSI that forms part of government's basic functions.

In its report *Cost recovery by government agencies,* the Productivity Commission considered the application of the various pricing models to PSI, with a particular focus on achieving economic equity and efficiency. These concepts are discussed below.

7.5.1 Economic equity

A frequent argument in support of cost recovery is that it may enhance economic equity by requiring those who use a product to bear the costs. Equity effects have vertical and horizontal dimensions, with the horizontal dimension most relevant to the cost recovery model.[281] The concept of horizontal equity refers to treating people in similar situations in similar ways, which in the current context translates as requiring those who benefit from using the information product to pay the associated costs.[282] This concept is similar to the beneficiary pays principle, which requires users to recognise costs associated with a product's development, and decreases the taxation burden on those who do not benefit from the product.[283]

The equity issue was a significant concern for the Committee throughout the Inquiry. The Committee questioned the fairness of allocating funds from general taxation revenue to the supply of products that only benefit particular groups in the community. It also questioned the level of equity

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[280] Charles Athur, 'What has happened to the trading funds report?' *The Guardian*, 28 February 2008, viewed 14 March 2009, http://www.guardian.co.uk.
[281] Productivity Commission, *Cost recovery by Government*, Commonwealth of Australia, Canberra, 2001, p. 12.
[282] Productivity Commission, *Cost recovery by Government*, Commonwealth of Australia, Canberra, 2001, p. 12.
[283] Productivity Commission, *Cost recovery by Government*, Commonwealth of Australia, Canberra, 2001, p. 15.

associated with commercial re-users profiting from the sale of PSI after having obtained the information from government at a marginal price.

In his article *Fee or free? The hidden costs of free public sector information*, Mr Mike Clark advised who should pay for PSI:

> The nub of the matter is this. If society at large is the principal beneficiary, then society at large, in the form of the taxpayer, should pay. Even if the beneficiary is a significant minority, this argument would probably hold good. If, however, a relatively small number of persons or businesses were the only ones that derived benefit from the use of any particular data, there is a strong case for suggesting that this small group should pay. Either way it can be shown that the solution is actually in the public interest.[284]

Mr Clark's point draws attention to a weakness in the horizontal equity and beneficiary pays arguments, as they deny the possible occurrence of positive externalities or spill over effects that may arise from the use of products or services.

Similarly, the Productivity Commission indicated that the application of cost recovery to information products will only achieve economic equity if they do not comprise public good characteristics. In this context, the Productivity Commission concluded general taxation revenue, rather than cost recovery, should be used to fund the "basic information product set" of government agencies. The Commission argued that the "basic information product set" of government agencies included information products possessing public good characteristics, positive spillover effects, or "that are required for other public policy purposes of the government."[285] The Committee notes the extensive evidence in support of this argument, and in particular the claim that the pricing of non-rivalrous and non-excludable public goods is never economically efficient.[286]

Finding 17: The application of no cost or marginal cost pricing to public sector information is appropriate when information and data products have public good characteristics, produce positive externalities or are required for other public policy purposes of government.

One of the key issues for the Productivity Commission when considering the application of cost recovery charges to information products is that raising prices above marginal costs can severely restrict use of information products, and prevent potential users from enjoying the product despite their consumption imposing no marginal cost to the agency supplying the product. This is because the associated production costs of information products are characterised by high fixed costs and low marginal costs. Once information has been collected and compiled, the cost of supplying it to additional users is typically quite low. On this basis, economists claim it is appropriate only to attach a marginal price to information products to recover the cost of dissemination:

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[284] Mike Clark, 'Fee or free? The hidden costs of free public sector information', *Business information review*, vol. 24, no. 1, 2007, pp. 56-57.
[285] Productivity Commission, *Cost recovery by Government*, Commonwealth of Australia, Canberra, 2001, p. 33.
[286] Kirsti Nilsen, *Economic theory as it applies to statistics Canada: A review of the literature*, Statistics Canada, Toronto, 2007.

> Once information is collected, the cost of supplying it to an additional user tends to be low, even close to zero in the case of the Internet. Prices that are any higher than the marginal costs of dissemination (for example, the costs of printing an extra copy of a publication or downloading data from a website) may discourage socially desirable uses of this information.[287]

This view has also been recently enunciated in a review of pricing models for PSI provision in the UK. In an analysis of alternative pricing models for use by trading funds (see above), economists concluded that a marginal cost regime produced greater benefits than cost recovery, at least when applied to basic information:

> Performing this [cost-recovery regime with marginal cost] comparison on the subset of [trading fund] products suitable for analysis, it was found that, in most cases, a marginal cost regime would be welfare improving – that is, the benefits to society of moving to a marginal cost regime outweighed the costs.[288]

The Committee agrees with the above assertion and also with the recommendations of the Productivity Commission on this matter. The Committee strongly believes that any government concerned with achieving economic equity or efficiency in its pricing of PSI, rather than a financial return, will not hesitate to shift its policy from cost recovery to no cost or marginal costs. In particular, the Committee is of the view that all fundamental data that is produced and collected as part of the Victorian Government's core business activities should be priced at no cost or marginal cost, especially those comprising public good characteristics and positive externalities. To assist determine which information and data the pricing policy should apply to, the Victorian Government should develop a flowchart similar to the Australian Government's flowchart for assessing funding for information products included in the *Cost recovery guidelines* (see Figure 1).

Recommendation 17: That all information and data determined to form part of the Victorian Government's basic information product set, as defined by the Productivity Commission, be priced at no cost or marginal costs.

7.5.2 Economic efficiency

An important consideration for governments when developing products or services is determining the most efficient way to ensure the delivery of maximum benefits with minimal costs. As noted in the Productivity Commission's review, a widely recognised rationale for cost recovery is that it provides public sector agencies with an effective demand management tool.[289]

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[287] Productivity Commission, *Cost recovery by Government*, Commonwealth of Australia, Canberra, 2001, p. 22.
[288] David Newbery, et al., *Models of public sector information provision via trading funds*, Department for Business, Enterprise and Regulatory Reform and HM Treasury, London, 2008, p. 2. Emphasis in original.
[289] Productivity Commission, *Cost recovery by Government*, Commonwealth of Australia, Canberra, 2001, p. 14.

According to the Productivity Commission, to the extent that cost recovery reduces the dependence on general taxation revenue, efficiency losses from higher general taxation are avoided. For this to occur, however, the Productivity Commission argued that cost recovery must be linked directly to the supply of a particular product or service and not be undertaken merely to raise revenue. In particular, it recommended that:

- cost recovery arrangements that are not justified on grounds of economic efficiency should not be undertaken solely to raise revenue for Government activities (Recommendation 7.1)[290]; and

- cost recovery arrangements should apply to specific activities or products, and not to the agency as a whole (Recommendation 7.2)[291].

Partial cost recovery was also determined to be inappropriate with the Commission arguing that the costs of a product or service should be either recovered in full or funded from general taxation revenue. The Commission suggested this would reduce the need for public sector agencies to make subjective decisions about the level of public and private benefits involved in each product or service.[292]

Finding 18: Cost recovery enhances economic efficiency when applied to the creation of information products that do not form part of governments' basic information product set.

The Committee also wishes to acknowledge the economic inefficiencies that arise from the cost recovery model when government agencies are required to pay each other for data. In its submission to the Inquiry, the Open Source Geospatial Foundation Australia – New Zealand Chapter (OSGeo-AustNZ) indicated there had been reports of Victorian Government departments being requested to pay a substantial annual fee per user in order to access spatial data, data which the Government had already purchased or captured internally.[293] This policy can create extensive costs within governments as it raises transaction costs without generating any added revenue to governments as a whole. Mr Michael Cross of the UK Guardian newspaper argues this practice "generates an absurd bureaucracy in which one government agency has to negotiate contracts with another government agency for permission to use information which the government already owns."[294] The Committee agrees with this position, and believes the Victorian Government should keep this practice to a minimum.

[290] Productivity Commission, *Cost recovery by Government*, Commonwealth of Australia, Canberra, 2001, p. lv.
[291] Productivity Commission, *Cost recovery by Government*, Commonwealth of Australia, Canberra, 2001, p. lvi.
[292] Productivity Commission, *Cost recovery by Government*, Commonwealth of Australia, Canberra, 2001, p. xliv.
[293] Open Source Geospatial Foundation Aust-NZ, *Submission*, no. 33, 2 August 2008, p. 9.
[294] Michael Cross, 'One small step on a long-haul journey', *The Guardian*, 25 May 2008, viewed 17 April 2009, http://www.guardian.co.uk.

Recommendation 18: That the Victorian Government reconsider with a view to minimising, if not stopping, the practice of departments charging each other to access and re-use Government-owned information and data.

The Committee is aware that when information products do not possess public good characteristics or positive spill over effects, and have not been created to fulfil core functions of government, cost recovery may be an appropriate pricing model. The evidence indicates it is efficient to recover costs for information products incremental to fundamental data, and which provide a private benefit to users requesting the information. It is also a practice deemed feasible by external users. In his presentation to the Committee, Mr David Hocking, Chief Executive Office of the Australian Spatial Information Business Association (ASIBA), advised when it is appropriate for governments to charge for the provision of PSI:

> There is a legitimate time that they can and should charge for data, and again it is a fine line, but where government has added value, for example – let's take the ABS, which provides raw data – if it makes a product out of that to make it easier to go out to the market, not to make a profit, then I think somebody should pay for that, because it is not just the collection of raw data that would normally be available. It would have a value adding that perhaps the private sector would not want to do or it would not be cost effective.[295]

According to the Productivity Commission, for the recovery of incremental costs to be efficient, it is important that those costs directly relate to the activity in question:

> It is important that incremental information products are priced to recover the incremental cost incurred by the agency. Charging below incremental cost would divert resources from the agency's basic activities (which should always take precedence over any additional work). Pricing above incremental cost would discourage any potential users who are prepared to pay no more than the incremental cost.[296]

Achieving economic efficiency in these circumstances also requires that cost recovery be directly linked to the supply of an information product rather than to the agency as a whole.[297]

The Committee is of the opinion that recovery of costs incurred through the provision of additional products at the request of individual users is justified. As per the Productivity Commission's findings, the Committee also agrees that the costs attached to provision of incremental data should account for the presence of competition in the market. If the supply of the requested incremental data is unlikely to have any competitors, competitive neutrality pricing is not required. It may be required, however, in instances when fundamental data is available for manipulation and integration by external sectors, and there is the potential for private competitors to enter

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[295] David Hocking, CEO, Australian Spatial Information Business Association (ASIBA), *Transcript of evidence*, Canberra, 13 August 2008, p. 14.
[296] Productivity Commission, *Cost recovery by Government*, Commonwealth of Australia, Canberra, 2001, p. 169.
[297] Productivity Commission, *Cost recovery by Government*, Commonwealth of Australia, Canberra, 2001, p. xliv.

the market.[298] The Committee supports this position and recommends that the Victorian Government adopt the Productivity Commission's recommendation regarding the pricing of incremental data.

Recommendation 19: That the Victorian Government classify additional information products into three broad categories and price them as follows;

- dissemination of existing products at no cost or marginal cost;
- incremental products (which may involve additional data collection or compilation) at incremental (avoidable) cost; and
- commercial (contestable) products according to competitive neutrality principles.

7.5.3 Economic and social welfare benefits

7.5.3.1 Economic benefits

Based on the evidence, no cost or marginal cost provide the best pricing options to maximise the economic and social value of PSI to society as a whole. Inappropriate application of cost recovery significantly restricts access to PSI within the broader community, and may stifle industry competition and innovation. The Productivity Commission, for example, received evidence indicating that high information costs could discourage research and development across a number of industries and impede the introduction of new technologies.[299] In his presentation to the Committee, Mr Alan Noble of Google Australia and New Zealand spoke of difficulties experienced by smaller organisations attempting to obtain expensive PSI:

> For smaller entities – certainly for individuals and smaller companies – it simply requires too much of an investment to invest. Essentially the point we are really trying to make is that yes, there is information there and it is possible with sufficient resources to extract that information, but it is very, very difficult to do so. You almost have to be a company of the size of Google with its resources to be able actually to undertake, so I really think that is worth mentioning.[300]

In the area of spatial data, the ACIL Tasman report *The value of spatial information* identified at least one area where full cost recovery charging for fundamental data had resulted in an organisation not using a fundamental dataset in a spatial information application.[301] In its submission to the Inquiry, OSGeo-AustNZ referred to substantial fees for access to spatial information in Victoria. Using a hypothetical situation of a small start-up organisation, OSGeo-AustNZ requested a quote regarding the costs associated with accessing the Vicmap datasets. In response, it received a quote estimated at $250,000 per year to access a limited base

[298] Productivity Commission, *Cost recovery by Government*, Commonwealth of Australia, Canberra, 2001, p. 169.
[299] Productivity Commission, *Cost recovery by Government*, Commonwealth of Australia, Canberra, 2001, p. 115.
[300] Alan Noble, Head, Engineering, Google Australia, *Transcript of evidence*, Melbourne, 30 September 2008, p. 5.
[301] ACIL Tasman, *The value of spatial information*, Canberra, 2008, p. 155.

set of data, not including regular updates. On the basis of this figure, OSGeo-AustNZ stated:

> This fee explains why there is currently no entrepreneurial activity to speak of in Victoria, relating to the use of State spatial data.
>
> In a world where customers are accustomed to utilising tools such as Google Earth for free, it is difficult to see where an entrepreneur could hope to make a return on such an investment.[302]

The Committee observed in its discussion paper that high costs could lead to data monopolies where there is limited opportunity for new firms or products to enter the marketplace. In the EU, for example, governments had been criticised for behaving in a commercial manner and as a consequence squeezing out private competitors, some of whom might have been highly innovative.[303]

The emerging view regarding access to PSI suggests that the application of no cost or marginal costs will increase access and usage, and increase the rate of innovation both downstream and in related and complimentary markets.[304] A number of studies support this argument, with many demonstrating that open access regimes, where PSI is provided at no or marginal costs, enhance the economic market conditions for the re-use of PSI, stimulating economic growth and creating employment opportunities.[305] The report *Commercial exploitation of Europe's public sector information* conducted for the European Commission found that the abolition of government licence fees in the EU would result in a doubling of the market size and produce additional tax revenues that would more than offset the lost income from charging for PSI.[306]

Mr Peter Weiss, former policy analyst at the US National Weather Service, reviewed the merits of open access and cost recovery in his article *Borders in cyberspace: Conflicting public sector information policies and their economic impacts.* In his analysis, Mr Weiss referred to a study commissioned by the private sector members of the Dutch Federal Geographic Data Committee, which attempted to measure the economic impact of open access policies on spatial data. A key finding predicted that lowering the price of public sector geographic data by 60 per cent would lead to a 40 per cent annual turnover growth plus an employment growth of approximately 800 jobs. The study also predicted that businesses would

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[302] Open Source Geospatial Foundation Aust-NZ, *Submission*, no. 33, 2 August 2008, p. 9.
[303] Economic Development and Infrastructure Committee, *Discussion paper - Inquiry into improving access to Victorian public sector information and data*, Parliament of Victoria, Melbourne, 2008, p. 34.
[304] Rufus Pollock, *The economics of public sector information*, University of Cambridge, Cambridge, 2008, p. 45.
[305] ACIL Tasman, *The value of spatial information*, Canberra, 2008; David Newbery, et al., *Models of public sector information provision via trading funds*, Department for Business, Enterprise and Regulatory Reform and HM Treasury, London, 2008; Pira International Ltd, *Commercial exploitation of Europe's public sector information - Executive Summary*, European Commission Directorate-General for the Information Society, Luxembourg, 2000.
[306] Pira International Ltd, *Commercial exploitation of Europe's public sector information - Executive Summary*, European Commission Directorate-General for the Information Society, Luxembourg, 2000, p. 6.

invest the savings from paying lower prices into the development of new products, potentially expanding the marketplace.[307]

The Committee recognises the challenges in quantifying the actual economic benefits of reducing the cost of PSI. Throughout the Inquiry, however, a number of witnesses presented evidence showing how reduced prices for the supply of particular information products had increased demand for those products. Mr Ben Searle, the General Manager of the OSDM, provided the Committee with statistics on the rates of access to data that were captured for four years following the introduction of the Australian Government's *Policy on Spatial Data Access and Pricing.* The statistics demonstrated a rapid take up of access to spatial datasets, rising from approximately 50,000 accesses in the first year to over 1.5 million datasets accessed by the fourth year. Mr Searle advised the Committee:

> In the first financial year under the policy approximately 50 000 datasets from those 400 to 500 were accessed by a range of public-private sector, international and government agencies and other jurisdictions. That figure in four years time grew to in excess of 1.5 million datasets. We are not collecting those figures anymore for a number of reasons, one of which is that we think that policy is successful. You can tell by the growth that making the data freely and openly available, or at very low cost, has been successful and the demand has gone up considerably.[308]

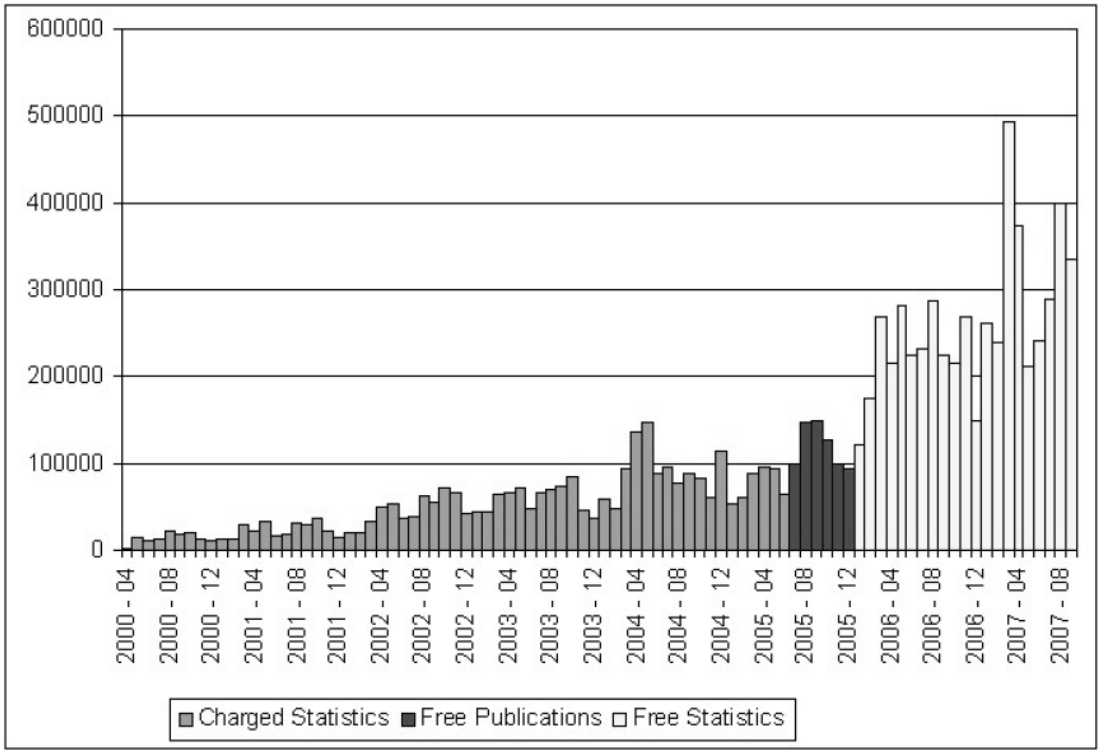
The ABS is another public sector agency that experienced increased demand for its information products following the implementation of a policy in 2005 to freely disseminate its statistics on the internet. Table 2 shows the total products downloaded from 2003-2007. Figure 3 graphs the use of ABS statistics over the same time period.

Table 2: Product downloads from the ABS website, 2003-04 to 2006-07[309]

	2003-04	2004-05	2005-06	2006-07
Reported	948,956	962,872	1,868,280	4,501,530

[307] Peter Weiss, *Borders in Cyberspace: Conflicting public sector information policies and their economic impacts*, U.S. Department of Commerce, 2002, p. 6.
[308] Ben Searle, Manager, Office of Spatial Data Management, Geoscience Australia, *Transcript of evidence*, Canberra, 13 August 2008, p. 3.
[309] Rufus Pollock, *The economics of public sector information*, University of Cambridge, Cambridge, 2008, p. 34.

Figure 3: Use of ABS statistics[310]



In its submission to the Inquiry, the ABS stated:

> Since the introduction of Free Statistics on the Website, there have been spectacular increases in the access to the statistics. The ABS website has grown from 195,000 pages and 110,000 downloads in 2005, to nearly 750,000 pages and over 5,000,000 downloads in 2008. It can be argued, though it cannot be quantified, that the broad economic and social benefit of this access far outweighs the revenue foregone...In our view the release of information free on the internet should be an underpinning principle for the sharing of public sector information.[311]

Finding 19: There is an emerging view that the application of no cost or marginal cost pricing to public sector information will increase access to and re-use of such information, with the potential to stimulate productivity and economic growth.

7.5.3.2 Social benefits

Another important consideration in this discussion is which pricing model serves the overall welfare of citizens more effectively. While analysis of economic benefits centre predominantly on commercial activities that may arise from the re-use of PSI, the Committee also wishes to focus on how the re-use of PSI will enhance welfare, and which pricing model will facilitate this.

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[310] Rufus Pollock, *The economics of public sector information*, University of Cambridge, Cambridge, 2008, p. 34.
[311] Australian Bureau of Statistics, *Submission*, no. 63, 27 August 2008, p. 9.

Throughout the Inquiry, the Committee received evidence advocating for increased availability to PSI at no cost or marginal cost, with the key rationale focussing on the fact that information and data is developed and collated using taxpayer's money. In contrast, some commentators expressed concern that the no cost or marginal cost model could result in taxpayers paying twice for PSI, first as taxpayers, and secondly if they wish to access the commercially available information as provided by the private sector. While this scenario is both inefficient and inequitable, the Committee notes that the same argument applies when governments price PSI above marginal costs. The only difference is that users purchase the information a second time from governments rather than commercial providers.[312] This issue is considered to be exacerbated in the latter scenario when particular users are given exclusive access to the information. If, on the other hand, the conditions of access and re-use are non-exclusive, anyone can go to the original source for the original information. If the information is priced at marginal costs, it can then be accessed at low cost.[313]

In his presentation to the Committee, Mr Carl Obst, the Victorian Regional Director of the ABS, advised of the strong movement and increasing demand by society to find out about the world and issues that affect them across environmental, economic and social factors, and in particular a "demand for information with a very fine level of detail around communities."[314] The Committee strongly believes that the provision of PSI at no cost or marginal costs will further encourage the discovery of such information and data by individuals, with the potential to stimulate civil participation and community empowerment. Economists also commonly state that no cost or marginal cost pricing achieves the greatest social benefits because information priced above marginal costs discourages socially desirable uses of information, thereby providing no benefit to the community.[315]

In response to growing evidence regarding the social and economic benefits associated with the no cost or marginal cost models, there has been a clear shift in the pricing policies of various countries that have traditionally adopted cost recovery. Austria, for example, amended its position on access to PSI, leading to its national mapping agency cutting its data fees by up to 97 per cent. In response, there was reportedly a substantial increase in demand for cartographic products of between 200 per cent and 1500 per cent.[316]

A more significant change in policy has recently been introduced by the UK Government, which has traditionally defended return on investment

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[312] Kirsti Nilsen, *Economic theory as it applies to statistics Canada: A review of the literature*, Statistics Canada, Toronto, 2007, p. 18.
[313] Graham Vickery and Sacha Wunsch-Vincent, *Digital broadband content: public sector information and content*, Organisation for Economic Co-operation and Development, 2006, p. 5.
[314] Carl Obst, Regional Director, Victoria, Australian Bureau of Statistics, *Transcript of evidence*, Melbourne, 8 September 2008, p. 2.
[315] Kirsti Nilsen, *Economic theory as it applies to statistics Canada: A review of the literature*, Statistics Canada, Toronto, 2007; Productivity Commission, *Cost recovery by Government*, Commonwealth of Australia, Canberra, 2001.
[316] Michael Cross, 'Austrian mountains: now 93% cheaper', *The Guardian*, 19 June 2008, viewed 18 April 2009, http://www.guardian.co.uk.

charging in order to support its Trading Funds system. However, in 2006 and 2008, two reports investigating government contracting arrangements and the case for free data reportedly "brought the whole model of commercial government trading under the spotlight."[317] Research conducted by the UK Office of Fair Trading into *The commercial use of public information* demonstrated that increased competition in PSI could benefit the UK Government by around £1 billion a year.[318] Another study conducted by Cambridge University examined the operations of the UK Government's Trading Funds system and concluded that the marginal cost model would enhance welfare more than the existing cost structure. The report also found that the benefits to society of moving to a marginal cost regime would outweigh the costs.[319] In response to these reports, the UK Government announced as part of its 2008 budget report that the Shareholder Executive in the Department of Business, Enterprise and Regulatory Reform would undertake an assessment of the Trading Fund's business model and consider the benefits to the wider UK economy from any potential changes to this model.[320]

7.6 Role of government

As noted in the introduction of this Chapter, debate about how governments should price PSI draws attention to the role governments have in adding value to PSI. The concept of value-adding holds a number of meanings, although the most common involves integrating raw data with other data and transforming it into commercial products.

Throughout the Inquiry, witnesses expressed concern about governments behaving in a business capacity and competing with the private sector by selling value-added information products. All of the submissions that addressed this matter were of the view that value-adding should typically be the role of non-government organisations.[321] The Cyberspace Law and Policy Centre (CLPC) recommended that the Victorian Government avoid policies that allow commercial returns for value-added information.[322] ASIBA stated that "government agencies must re-focus on the management of good quality and current spatial data sets and further encourage the private sector to invest in the value add and deployment to the broader community."[323]

The VSC advised the Committee that the *Victorian Spatial Information Strategy 2008-2010* sets out the following roles for government and the

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[317] Michael Cross, 'Austrian mountains: now 93% cheaper', *The Guardian*, 19 June 2008, viewed 18 April 2009, http://www.guardian.co.uk.
[318] Office of Fair Trading, *The commercial use of public information*, UK Government, London, 2006, p. 4.
[319] David Newbery, et al., *Models of public sector information provision via trading funds*, Department for Business, Enterprise and Regulatory Reform and HM Treasury, London, 2008, p. 2.
[320] Office of Public Sector Information, *The United Kingdom report on the re-use of public sector information 2008*, UK Government, London, 2008, p. 50.
[321] Australian Spatial Information Business Association, *Submission*, no. 78, 24 September 2008; Cyberspace Law and Policy Centre, *Submission*, no. 68, 5 September 2008; Transformation Systems, *Submission*, no. 5, 1 August 2008; Victorian Spatial Council, *Submission*, no. 41, 22 August 2008.
[322] Cyberspace Law and Policy Centre, *Submission*, no. 68, 5 September 2008, p. 14.
[323] Australian Spatial Information Business Association, *Submission*, no. 78, 24 September 2008, p. 5.

private sector regarding the commercial development of spatial information:

- government to perform the role of wholesale distributor to the private sector, only undertaking other types of distribution where the private sector is unable or unwilling. It will also provide opportunities for value-adding to the private sector; and

- the private sector will add value to government spatial data by enhancing, integrating and developing new/derived products and services.[324]

The Committee also notes the strong support in the literature regarding the role of governments as purely information providers. In particular, the Committee wishes to draw attention to the study *The Role of Government in a Digital Age*, which was commissioned by the US Computer and Communications Industry Association in 2000. Professor Joseph Stiglitz lead the study, which involved an independent analysis of the appropriate role for government and established twelve principles for government participation in a digital economy.[325] The principles were divided into three categories: "green light" principles that raise few concerns; "yellow light" principles that raise increasing levels of concern; and "red light" principles that raise significant concern.[326] These are outlined in Text Box 2.

Text Box 2: Guiding principles for online and informational government activity[327]

'Green light' principles for online and informational government activity:

- providing public data and information is a proper governmental role;
- improving the efficiency with which governmental services are provided is a proper governmental role; and
- the support of basic research is a governmental role.

'Yellow light' principles for online and informational government activity:

- the government should exercise caution in adding specialised value to public data and information;
- the government should only provide private goods, even if private sector firms are not providing them, under limited circumstances;
- the government should only provide a service online if private provision with regulation or appropriate taxation would not be more efficient;

[324] Victorian Spatial Council, *Submission*, no. 41, 22 August 2008, p. 19.
[325] Joseph E Stiglitz, et al., *The role of government in a digital age*, Computer and Communications Industry Association, 2000.
[326] Joseph E Stiglitz, et al., *The role of government in a digital age*, Computer and Communications Industry Association, 2000, p. 4.
[327] Joseph E Stiglitz, et al., *The role of government in a digital age*, Computer and Communications Industry Association, 2000, p. 5.

- the government should ensure that mechanisms exist to protect privacy, security, and consumer protection online;
- the government should promote network externalities only with great deliberation and care; and
- the government should be allowed to maintain proprietary information or exercise rights under patents and/or copyrights only under special conditions (including national security).

'Red light' principles for online and informational government activity:

- the government should exercise substantial caution in entering markets in which private-sector firms are active;
- the government (including government corporations) should generally not aim to maximise net revenues or take actions that would reduce competition; and
- the government should only be allowed to provide goods or services for which appropriate privacy and conflict-of-interest protections have been erected.

In addition, Professor Anne Fitzgerald in her presentation to the Committee quoted a passage from an article published in the Yale Journal of Law and Technology which addressed the role that the US federal government should have in modernising its internet infrastructure:

> In order for public data to benefit from the same innovation and dynamism that characterize private parties' use of the Internet, the federal government must reimagine its role as an information provider. Rather than struggling, as it currently does, to design sites that meet each end-user need, it should focus on creating a simple, reliable and publicly accessible infrastructure that "exposes" the underlying data. Private actors, either nonprofit or commercial, are better suited to deliver government information to citizens and can constantly create and reshape the tools individuals use to find and leverage public data. The best way to ensure that the government allows private parties to compete on equal terms in the provision of government data is to require that federal websites themselves use the same open systems for accessing the underlying data as they make available to the public at large.[328]

Finding 20: There is growing recognition that government should have a limited role in adding value to public sector information (PSI) for commercial purposes. The value of PSI should be enhanced through private sector activity for the creation of new products and services.

The Committee accepts these views and is of the opinion that a shift in the Victorian Government's pricing policy from cost recovery to no cost or marginal costs will facilitate an increase in the availability of PSI whereby the community and private sectors will have a greater opportunity to re-use and redistribute that information and data. The opportunity for the

[328] David Robinson, et al., 'Government data and the invisible hand', *Yale Journal of Law and Technology*, vol. 11, no. Fall 2008, 2008.

Government to behave in a commercial capacity will decrease with increased involvement from other sectors in enhancing the value of PSI.

Recommendation 20: That the Victorian Government enhance its role as an information provider as a means to improve social benefits and facilitate commercial activity in the private sector.

While to a lesser extent, the Victorian Government may still have a role in supplying some value-added products to the market. This practice should be limited, however, to instances when it is not economically feasible for the private sector to do so or if the private sector is unwilling. As noted earlier, public sector agencies that supply information products are often requested by individual users to supply additional information products. In these cases, it is typically more efficient for those agencies to supply these products rather than the private sector as the additional product is so closely linked to the fundamental data.[329] It is economically feasible for the production of such products to be funded through cost recovery, although certain conditions should apply.

[329] Productivity Commission, *Cost recovery by Government*, Commonwealth of Australia, Canberra, 2001, p. 168.

Chapter Eight: Key points

- Open standards for the storage of public sector information (PSI) should be the default position for the Victorian Government, in order to ensure wide access to information and data when made available to the public, and to ensure that Victorian Government PSI does not become inaccessible over time due to changing proprietary digital formats.

- The implementation of the Victorian Government Information Management Framework (IMF) should provide for decentralised custodianship of Victorian Government PSI, with appropriate controls and accountability for release remaining the responsibility of individual departments within the Victorian Government.

- The Australian Government Locater Service (AGLS) metadata standard should be implemented for all metadata created across the Victorian Government.

- The development of a comprehensive directory for Victorian Government information will significantly enhance the potential for PSI to be used effectively by business, government and the public.

- Efficiency and transparency of the Victorian Government will also be enhanced through the proactive publication of PSI in which there is significant public interest.

Chapter 8

Chapter Eight: Technical infrastructure for the release of public sector information

Improving access to and re-use of public sector information (PSI) requires that government make more information available, and that it implement technical infrastructure to support data management and to facilitate discovery. An important feature of this technical infrastructure is interoperability, which can be achieved through the adoption of commonly agreed standards around information storage and delivery formats, metadata frameworks and data directories. As noted by Mr John Wilbanks, Vice-President for Science at Creative Commons, the internet and Web has facilitated the interoperability of data management systems:

> The architecture of the internet and of the Web is open and standard. That means that people can innovate without asking permission, can create new forms of communication and be sure they will run on the existing platform. Before the Web we had a series of closed networks, each controlled by a central authority – Ceefax, Minitel, CompuServe, the early AOL – each incompatible, unable to communicate well with each other. The explosive growth of the Web came about because it made the opposite design choices: open content and protocols, a focus on compatibility and interoperability.[330]

This Chapter reviews the use of open standard formats for storage and delivery of PSI in order to enhance accessibility and reusability, and to preserve it for future use. Key elements of technical infrastructure necessary to enhance discovery of the Victorian Government's PSI are then discussed. Interoperability of standards and infrastructure is considered throughout the Chapter.

As discussed in Chapter Two, while making recommendations around the delivery and discovery of Victorian Government PSI, the Committee intends for these recommendations to apply prospectively to PSI rather than to existing information and data.

8.1 Open standards

A key consideration when facilitating access to and re-use of PSI is ensuring that the formats used allow the free flow and exchange of information. Recognition of this feature of PSI release has been recognised by governments, and reflected in the development of various e-government and interoperability policies. The Victorian Government launched its e-government vision *Putting people at the centre* in December 2005*,* which

[330] John Wilbanks, Vice President, Science Commons, Creative Commons, *Transcript of evidence*, Melbourne, 30 September 2008, p. 5.

aimed to create a new era of rich interaction between Government and citizens by "using technology to link different government programs and resources in a seamless way."[331] In March 2006, the former Office of the Chief Information Officer released a policy statement requiring departments and agencies to comply with the approved *Whole of Victorian Government standards for data interoperability between information systems*. The policy aimed to enhance information sharing between departments and agencies, by:

- allowing them to work as an integral part of the Government, and reduce the risk of creating islands of disconnected information;
- treating business data as a government asset by reusing existing data assets with little or no additional investment;
- improving government services to citizens and businesses through interoperable business processes and analytics; and
- facilitating dynamic communities whereby government services are customised and targeted to changing profiles of geographically co-located populations and their needs.[332]

At the Commonwealth level, the Australian Government Information Management Office (AGIMO) released the *Information Interoperability Framework* to assist government agencies improve their capacity for information management, and support the exchange of information. The framework recognises the need for agencies to work together to better respond to complex policy challenges and to improve the delivery of services to citizens.[333]

As part of the Framework, the AGIMO released the *Technical interoperability framework*, which sets out a common language and standards for adoption by Australian Government agencies in order to deliver the Government's policy and program priorities.[334] While the framework refers to use of both open and proprietary standards by agencies, preference is given to the deployment of open standards "as these require no royalty payments, do not discriminate on the basis of implementation, allow extension, promote reusability and reduce the risk of technical lock-in and high switching costs."[335]

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[331] Victorian Government, 'Putting people at the centre - Executive summary', viewed 18 March 2009, <http://www.egov.vic.gov.au>.
[332] Office of the Chief Information Officer, 'Data interoperability - ICT policy', viewed 25 March 2009, <http://www.egov.vic.gov.au>.
[333] Australian Government Information Management Office, *Australian Government Information Interoperability Framework*, Department of Finance and Administration, Canberra, 2006, p. 3.
[334] Australian Government Information Management Office, *Australian Government Technical Interoperability Framework*, Department of Finance and Administration Canberra, 2005.
[335] Australian Government Information Management Office, *Australian Government Technical Interoperability Framework*, Department of Finance and Administration Canberra, 2005, p. 3c.

8.1.1 Open standards versus proprietary formats

The Committee received evidence from witnesses advising of benefits associated with the storage and management of PSI using open standard formats.[336] Open standards are developed and maintained through a collaborative and consensus driven process and are considered necessary for interoperability and data exchange between different products or services. Creative Contingencies claimed in its submission that there are freely accessible, open, documented standards for just about every form of data.[337] One of the best examples is the eXtensible Markup Language (XML) platform, the primary purpose of which is to allow information systems to share structured data, particularly via the internet.

The Committee notes a recent tendency in both proprietary software and open source software to allow files to be saved in open standard formats. In some cases, companies holding rights over proprietary formats have made these widely available, possibly acknowledging an emerging international preference away from proprietary formats. For example, Adobe Systems' Portable Document Format (pdf) was released as an open standard on 1 July 2008, and published by the International Organization for Standardization (ISO) as ISO 32000-1:2008. In February 2008, Microsoft released a number of technologies, including formats associated with a number of Microsoft Office products, under the Microsoft Open Specification Promise, in which Microsoft "irrevocably promises not to assert any Microsoft Necessary Claims against you for making, using, selling, offering for sale, importing or distributing any implementation to the extent it conforms to a Covered Specification."[338]

Despite growing support for open standards, it is still common for PSI to be presented in proprietary formats or in other ways that limit opportunities for re-use, sharing and integration with other data. According to the World Wide Web Consortium (W3C), most PSI is presented in two formats on the internet:

- proprietary formats that require users to have proprietary software or tools to access it; and
- open and standard human readable formats, such as HyperText Markup Language (HTML), which allow users to access data but limits potential for other use such as data integration.[339]

In its submission to the Committee, the Open Source Geospatial Foundation Australia – New Zealand Chapter (OSGeo-AustNZ) claimed there is an unhealthy focus on the use of proprietary solutions for the

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[336] Dr Terry Cutler, Principal, Cutler & Company, *Transcript of evidence*, Melbourne, 30 September 2008; Simon Edwards, Manager, Government and Industry Affairs, Microsoft, *Transcript of evidence*, Melbourne, 30 September 2008.
[337] Creative Contingencies, *Submission*, no. 70, 5 September 2008, p. 2.
[338] Microsoft Corporation, 'Microsoft Open Specification Promise', viewed 14 April 2009, <http://www.microsoft.com>. "Covered Specification" includes a range of technologies and file formats, including those mentioned above.
[339] Jose M Alonso, et al., *Improving access to government through better use of the web*, World Wide Web Consortium, 2009, p. 20.

management and delivery of spatial PSI by the Victorian Government.[340] OSGeo-AustNZ suggested that the provision of data in proprietary formats places constraints and undue expense on users wishing to re-use data. This assertion was based on the following experiences with proprietary formats:

- the use of a spatial dataset as intended requires the use of data in its native data format (excluding open standards). If data is not used in this format and translated into another format, there is often contextual information that is lost during the translation;

- post processing is often required to translate proprietary spatial data into a format suitable for other uses. Each time the source data is updated, which can occur on a regular basis, post processing is required again; and

- users of government spatial data may be required to purchase expensive software in order to use spatial PSI effectively.[341]

In her presentation to the Committee, Ms Yvonne Thompson, Manager of Strategic Data Development at the Victorian Emergency Services Telecommunications Authority (ESTA) recounted some of these issues when she spoke of constraints experienced by ESTA due to the provision of spatial data in proprietary formats:

> Outside of Vicmap, other VPS organisations, agencies and Local Governments all too frequently can only supply data in formats such as faxed pdfs. The Authority seeks to align to relevant standards, but there is no mechanism to require that others supply their data to us in compliance with that standard, except when provided as part of a contractual obligation. More often, when it comes to spatial data, we must take what we are given, determine whether we have resources to clean it up. Even if we do this, unless the provider cleans up their own data we face exactly the same problem a year later when we want an update.[342]

While limitations associated with proprietary formats are most evident in the spatial data area, the Committee heard how they can place constraints on other sectors, such as the community sector and non-profit organisations. In its submission to the Inquiry, the Victorian Council of Social Service (VCOSS) stated that community service organisations produce an extensive amount of PSI about community needs and appropriate responses. This information is regularly provided to government departments and other funding agencies, but usefulness of this information is limited by inconsistent data schemas and the absence of interoperability standards.[343]

The Committee proposes that the Victorian Government use open standard formats by default in order to maximise data interoperability and

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[340] Open Source Geospatial Foundation Aust-NZ, *Submission*, no. 33, 2 August 2008, p. 11.
[341] Open Source Geospatial Foundation Aust-NZ, *Submission*, no. 33, 2 August 2008, p. 12.
[342] Yvonne Thompson, Manager, Emergency Services Telecommunications Authority, *Supplementary evidence*, 27 November 2008, p. 10.
[343] Victorian Council of Social Services, *Submission*, no. 37, 22 August 2008, p. 2.

transfer. Aside from addressing constraints associated with proprietary formats, open standards will be an important component of an open access framework.[344] The Committee also heard from witnesses that governments cannot and should not attempt to predict the ways PSI may be re-used.[345] They advocated that the presentation of data using open standards was necessary to facilitate re-use in a range of unforeseeable ways. Dr Terry Cutler, for example, advised the Committee:

> It is very important that that information be made available in a form that is durable and is able to be reused – that is very important with respect to digital formats – on the basis that there should be no attempt to predict the nature of that reuse. Most of the economic value of use by third parties will involve unpredicted uses, so the form in which information and data is made available very much influences its economic potential for third parties.[346]

Finding 21: The provision of public sector information in open standard formats is a key component of open access.

Advocates of open standards also point to their usefulness in maintaining long-term preservation of PSI, and minimising the risks of it becoming inaccessible over time as a consequence of format obsolescence. OSGeo-Aust NZ advised the Committee that the use of proprietary data formats for archiving spatial data is particularly risky:

> Given the Government's experiences with vendor lock-in and lack of upgrade options, it is highly likely that in ten years time the spatial PSI that has already been archived in proprietary formats will be unreadable.[347]

The University of Melbourne made a similar point in its submission to the Inquiry, claiming there have been numerous examples of digitised artefacts becoming inaccessible because of rapid changes in information technology:

> …file formats become obsolete, storage media decay or become unreadable because the requisite hardware is no longer produced or supported.[348]

When data is stored in open standard formats, on the other hand, and is publicly documented and freely available, the data can always be replicated for future access if necessary.

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[344] Australian Service for Knowledge of Open Source Software, *Submission*, no. 73, 5 September 2008, p. 1.
[345] Dr Terry Cutler, Principal, Cutler & Company, *Transcript of evidence*, Melbourne, 30 September 2008; Dr Anne Fitzgerald, Adjunct Professor, School of Law, Queensland University of Technology, *Transcript of evidence*, Queensland, 12 August 2008; Brian Fitzgerald and Anne Fitzgerald, *Submission*, no. 38, 25 August 2008; Google Australia, *Submission*, no. 54, 25 August 2008; Neale Hooper, Principal Lawyer, Office of Economic and Statistical Research, Queensland Treasury, *Transcript of evidence*, Queensland, 12 August 2008; Prof Richard Jefferson, CEO, CAMBIA, *Transcript of evidence*, Canberra, 13 August 2008.
[346] Dr Terry Cutler, Principal, Cutler & Company, *Transcript of evidence*, Melbourne, 30 September 2008, p. 3.
[347] Open Source Geospatial Foundation Aust-NZ, *Submission*, no. 33, 2 August 2008, p. 12.
[348] University of Melbourne, *Submission*, no. 34, 22 August 2008, p. 8.

The Committee also wishes to note that the storage of data in open standard formats does not mean that the data is publicly available, as under an open access licence. Files stored in open standard formats can be secured against unauthorised access. In the context of preserving digital content, there is a strong argument for the provision of all PSI in open standard formats, including information and data identified as inappropriate for public release.

Recommendation 21: That the Victorian Government require wherever possible that its information and data be stored in open standard formats.

The Committee notes the Victorian Government's *ICT Policy: Data interoperability* does not consider the respective place of proprietary and/or open standard formats in government operations. The Committee also notes that the proposed National Government Interoperability Framework, originally anticipated for release in 2005 and potentially incorporating recommendations for format standards across all Australian jurisdictions (Commonwealth, State and Local), has not yet been released. In anticipation of the need for a consistent approach to data and information file formats, the Committee recommends that the Victorian Government develop a policy position and guidance on this matter.

Recommendation 22: That the Victorian Government develop a policy position and guidelines on the use of open standards for presentation, storage and delivery of public sector information by public sector agencies.

8.1.2 Spatial information

There is extensive support for open standards for the storage and delivery of spatial data within the spatial information industry. In 2005, the public and private sectors of the industry established the Spatial Interoperability Demonstration Project (SIDP) to demonstrate that spatial interoperability is necessary to help address global issues. The project found that many organisations are limited by inflexible and incompatible spatial data systems. Spatial interoperability, on the other hand, was demonstrated to:

- reduce costly data acquisition, maintenance and processing;
- provide direct, on-demand access that reduces time and costs;
- encourage vendor-neutral flexibility and extensibility of products;
- save time, money and resources; and
- enhance decision-making.[349]

OSGeo-AustNZ claimed in its submission that the use of open standard formats has revolutionised the provision and consumption of spatial data, particularly when both producers and consumers use standards that do not require data translation or rework, and there is no contextual loss of

[349] Australian Spatial Information Business Association, 'Fact sheet 1: Executive summary - Spatial Interoperability Demonstration Project', viewed 17 March 2009, <http://www.asiba.com.au>.

information.[350] The Victorian Spatial Council (VSC) also supports the use of open standards as they allow users access to spatial data regardless of the software and hardware they use:

> Any development of technology and applications should be based on the notion of 'interoperability', i.e. enable data to be accessible by anyone anywhere; cater for all users, from highly sophisticated to non-technical users; and enable data exchange, regardless of which technology and data formats are used to create that data.[351]

There are a number of international initiatives for the spatial information industry promoting the development and use of open standards. One of these, the Infrastructure for Spatial Information in the European Community (INSPIRE) Directive, which was endorsed by the European Parliament and Council of the European Union in 2007, states:

> The infrastructure for spatial information in the Member States should be designed to ensure that spatial data are stored, made available and maintained at the most appropriate level; that it is possible to combine spatial data from different sources across the Community in a consistent way and share them between several users and applications; that it is possible for spatial data collected at one level of public authority to be shared between other public authorities; that spatial data are made available under conditions which do not unduly restrict their extensive use; that it is easy to discover available spatial data, to evaluate their suitability for the purpose and to know the conditions applicable to their use.[352]

The Directive requires that Member States report no later than 15 May 2010 to the European Commission on progress implementing the Directive. Member States are also required to provide updated reports to the European Commission every three years.[353]

Another initiative for the spatial information industry is the Open Geospatial Consortium (OGC), which is comprised of 365 organisations, agencies and universities and was established to "promote the development and use of advanced open systems standards and techniques in the area of geoprocessing and related information technologies."[354] The OGC is responsible for negotiating specifications that permit interoperability between diverse geospatial data stores, services and applications. At the user level, the OGC aims to maximise the value of past and future investments in geoprocessing systems and data.[355]

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[350] Open Source Geospatial Foundation Aust-NZ, *Submission*, no. 33, 2 August 2008, p. 13.
[351] Victorian Spatial Council, *Submission*, no. 41, 22 August 2008, pp. 23-24.
[352] European Commission, 'Directive 2007/2/EC of the European Parliament and of the Council of 14 March 2007 establishing an Infrastructure for Spatial Information in the European Community (INSPIRE)', *Official Journal of the European Union*, 2007, p. 2.
[353] European Commission, 'Directive 2007/2/EC of the European Parliament and of the Council of 14 March 2007 establishing an Infrastructure for Spatial Information in the European Community (INSPIRE)', *Official Journal of the European Union*, 2007, p. 10.
[354] Open Geospatial Consortium, 'FAQs - OGC's Purpose and Structure', viewed 18 March 2009, <http://www.opengeospatial.org>.
[355] Open Geospatial Consortium, 'FAQs - OGC's Purpose and Structure', viewed 18 March 2009, <http://www.opengeospatial.org>.

The Australian Government's Office for Spatial Data Management (OSDM) indicated its support for the OGC, stating in its submission that the ability of organisations to undertake activities such as overlaying data on Google Earth is made possible by interoperability standards developed by OGC.[356]

The International Organisation for Standardisation (ISO) is also involved in developing and mandating standards for use by the spatial data industry. The ISO is responsible for promoting the development of standards to facilitate the international exchange of goods and services.[357] In the context of spatial data, the ISO developed the 19100 series, which focuses specifically on defining, describing and managing geographic information. For example, ISO 19136 describes encoding of information in the Geography Markup Language (GML), which provides an open, vendor-neutral framework for the delivery and storage of geographic information. According to the ISO, this standard allows for the creation and maintenance of linked geographic datasets, and increases opportunities for organisations to share information.[358] The ISO 19100 series also includes a metadata standard (ISO 19115), which is discussed below.

The OGC and the Technical Committee within ISO work closely together to develop and further refine technical standards, with components of the OGC specifications being formalised and included in the ISO 19100 series.[359]

8.1.3 Scientific research

As discussed in Chapter Five, the Victorian Government has made substantial commitments to research and development (R&D), mainly through its Science, Technology and Innovation Initiative. Similar to spatial data, increasing accessibility and reusability of public sector research data will be achieved by making it available in formats that allow manipulation and integration with other datasets. The Australian Bureau of Statistics (ABS) strongly advocates for use of open standards and common technology to facilitate sharing of statistical data, stating in its submission that it "views the use of open source approaches and technologies and open standards as a key enabler for supporting discovery, access and use of Government information."[360]

The Committee notes that support for open standards and commons-based technologies within research communities has been driven by the lack of interoperability among storage formats and discovery tools for research materials. According to Mr John Wilbanks, researchers experience multiple barriers to finding and using one another's research and datasets, which leads many to duplicate work rather than build on prior results.[361] He noted that while the internet has considerably enhanced the way information is accessed and re-used in a number of sectors, it has failed to achieve the same for the scientific sector:

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[356] Office of Spatial Data Management, *Submission*, no. 24, 20 August 2008, p. 8.
[357] ANZLIC, 'Infrastructure: Standards', viewed 18 March 2009, <http://www.anzlic.org.au>.
[358] International Organisation for Standardisation, 'ISO 19136: 2007', viewed 31 March 2009, <http://www.iso.org/>.
[359] ANZLIC, 'Infrastructure: Standards', viewed 18 March 2009, <http://www.anzlic.org.au>.
[360] Australian Bureau of Statistics, *Submission*, no. 63, 27 August 2008, p. 10.
[361] John Wilbanks, Vice President, Science Commons, Creative Commons, *Transcript of evidence*, Melbourne, 30 September 2008, p. 2.

> There is an irony here. The World Wide Web was originally designed in a scientific lab to facilitate access to scientific knowledge. In every other area of life – commerce, social networking, buying books – it has been a smashing success. But in the world of science itself? With the virtues of an open Web all around us, we have proceeded to build an endless set of walled gardens, something that looks like Minitel rather than a World Wide Web for science.[362]

In Australia, emerging interest in the use of open standard formats in research communities is reflected in the establishment of the Australian National Data Service (ANDS), a cooperative centre located at Monash University with expertise in research data management. The ANDS received funding as part of the Commonwealth Department of Innovation, Industry, Science and Research's *National Collaborative Research Infrastructure Strategy* for the purpose of transforming data from around Australia into a cohesive collection of research resources.[363]

The Committee received evidence from Mr David Groenewegan, Deputy Director of the ANDS, who said that the project aims to create a data commons and systems that will encourage Australian researchers to share and find data in their area of expertise.[364]

While the target audience of the ANDS is broader than public sector research agencies, Mr Groenewegan advised the Committee that there is a considerable amount of government research data that would be of considerable utility if incorporated into the ANDS.[365]

Internationally, the Science Commons project, which is part of Creative Commons, designs strategies and tools for more efficient web-enabled scientific research. In its research proposal *Unleashing open innovation systems: the commons method,* Science Commons detailed four key recommendations directed towards increasing access to scientific research. Recommendation four focuses on the concept of "open cyberinfrastructure":

> Data without structure and annotation is a lost opportunity. Research data should flow into an open, public, and extensible infrastructure that supports its recombination and reconfiguration into computer models, its queryability by search engines, and its use by both scientists and the tax-paying public. This infrastructure should be treated as an essential public good.[366]

One of the key initiatives of Science Commons is *The Neurocommons*, which is the proof-of-concept project within the field of neuroscience where the core elements of Science Commons approach have been implemented. Using open source software, the Neurocommons provides a free and open system for data integration and information retrieval. It offers

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[362] John Wilbanks, Vice President, Science Commons, Creative Commons, *Transcript of evidence*, Melbourne, 30 September 2008, p. 5.
[363] ANDS Technical Working Group, *Towards the Australian data commons*, Department of Education, Science and Training, 2007.
[364] David Groenewegen, Deputy Director, Australian National Data Service, *Transcript of evidence*, Melbourne, 27 November, p. 2.
[365] David Groenewegen, Deputy Director, Australian National Data Service, *Transcript of evidence*, Melbourne, 27 November, p. 8.
[366] Science Commons, *Unleashing open innovation systems: the commons method* Creative Commons, Cambridge, Massachusetts, 2008, p. 61.

"one-click" access to more than 6,000 research tools and is annotated with machine-readable notes from the open biomedical literature.[367] According to Science Commons, the Neurocommons initiative is a useful beginning, and has provided some essential lessons about the need for knowledge-sharing infrastructure:

> We need open, stable namespaces for scientific entities that we can use in programming and integrating databases on the open Web, because stable names are part of the infrastructure. We need real solutions about long-term preservation (long-term meaning a hundred of years or more). We need new browsers and better text processing. We need a sense of what it means to "publish" in a truly digital sense, in place of the digitization of the paper metaphor we have in the PDF format. We need infrastructure that makes it easy to share and integrate knowledge, not just publish it on the Web.[368]

The Committee believes the Science Commons and ANDS projects provide useful insights into the rationale for greater adoption of open standards for the storage and delivery of research data, including public sector research. In particular, the Committee believes the Victorian Government should take the opportunity to engage in dialogue with the ANDS to determine how public sector research could potentially work within the ANDS framework. Mr Groenewegan advised the Committee how working with government would benefit the project:

> We actually believe that we need to be in discussion with and to work with people. So we would be happy to work with the Victorian Government on how we can work out this system so that it works for both you and for researchers outside. There is no point in us just saying, 'This is the way it will be', because it will not be. We do not have any power over anybody to enforce that, and we know that researchers in general like to do things the way they like to do them. The phrase 'herding cats' comes up quite a lot when you talk to people about academics. So we would be very happy to engage in a dialogue about that sort of stuff.[369]

Recommendation 23: That the Victorian Government engage with the Australian National Data Service project regarding its potential application to public sector research.

8.2 Raw data and published information

Aside from spatial data and research data, the Committee is aware of the wide range of PSI that could be released in open standard formats, particularly fundamental data that is collected as part of governments' core business activities. In its submission the ABS highlighted the importance of having access to datasets collected as a by-product of government administrative purposes:

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[367] Science Commons, *Unleashing open innovation systems: the commons method* Creative Commons, Cambridge, Massachusetts, 2008, p. 5.
[368] Science Commons, *Unleashing open innovation systems: the commons method* Creative Commons, Cambridge, Massachusetts, 2008, pp. 77-78.
[369] David Groenewegen, Deputy Director, Australian National Data Service, *Transcript of evidence*, Melbourne, 27 November, p. 9.

> These datasets are not usually constructed with statistical analysis in mind but often contain detailed transactional level information that is location based. Examples might include datasets from public transport ticketing systems or from land valuation systems. From an ABS perspective, it is important to seek out the statistical value that can be leveraged from the wide range of datasets maintained by government agencies.[370]

Deakin University and the University of Melbourne provided examples of information and data that their researchers wish to obtain but currently have limited access to.[371] Some of the examples provided include:

- water and power usage statistics for large institutions, such as universities and hospitals;[372]
- house and land information, including prices, taxes and geographic data;[373]
- Victorian perinatal data files and the Victorian Admitted Episodes Dataset;[374]
- crime statistics by region, including arrests, charges laid and other forms of police action;[375] and
- court records by region, including cases heard by court, disposition, outcome and sentence.[376]

Upon deciding which PSI to release, the Committee believes it is imperative that the Victorian Government provide information and data in both primary and secondary formats, and that the primary or raw data be released in openly documented and free formats. This is a key component of the proposed Information Management Framework (IMF) as the Committee believes it will contribute to an enhanced culture of sharing and collaboration across the public, private and community sectors. It may also significantly increase the value of data by facilitating the integration of datasets to create new products and services, or to seek alternative views on matters of interest.

The integration of diverse datasets is referred to as data 'mash-ups', which is the practice of "merging data from two or more different applications or data sources and producing comparative views of the combined information."[377] The provision of data in open standard formats is considered the most effective way to facilitate such mash-ups. Google Maps is an example of a product created as the result of data integration and it has revolutionised online mapping, access to geographic information

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[370] Australian Bureau of Statistics, *Submission*, no. 63, 27 August 2008, p. 2.
[371] Deakin University, *Submission*, no. 36, 22 August 2008, p. 8; University of Melbourne, *Submission*, no. 34, 22 August 2008, p. 2.
[372] University of Melbourne, *Submission*, no. 34, 22 August 2008, p. 2.
[373] University of Melbourne, *Submission*, no. 34, 22 August 2008, p. 2.
[374] Deakin University, *Submission*, no. 36, 22 August 2008, p. 8.
[375] Deakin University, *Submission*, no. 36, 22 August 2008, p. 8.
[376] Deakin University, *Submission*, no. 36, 22 August 2008, p. 9.
[377] Jose M Alonso, et al., *Improving access to government through better use of the web*, World Wide Web Consortium, 2009, p. 19.

and user generated content.[378] An extension of Google Maps is Google Transit, in which public transport information is combined with Google Maps to allow transport users to plan their trips using public transport schedules and other directions and mapping software. This service is currently provided in Perth, Western Australia.[379]

A Victorian example of the integration of various datasets is *Vicmap*, the authoritative collection of spatial data for Victoria. Some of the data currently presented in the Vicmap books include addresses, Crown land tenure, planning, property, transport and vegetation. According to Mr Martin of the Victorian Chapter of the Australian Spatial Information Business Association (ASIBA), the Department of Sustainability and Environment provides agencies, through negotiated licensing agreements, access to the Vicmap data in a format that allows them to integrate the data into their mapping systems.[380]

Data mash-ups can also increase the culture of transparency and accountability within governments by allowing citizens to customise PSI to their own particular interests to determine how effectively governments are working.[381] An example is *OpenAustralia.org*, a non-partisan website run by a group of volunteers who integrate information and data from various Australian government and parliamentary websites to encourage users to stay informed about the activities of their representatives in Parliament.[382]

Regarding the release of PSI in secondary or published formats, the Committee notes that this is typical practice for governments, including the Victorian Government. Under the IMF, this should continue for those materials containing data that cannot be modified or aggregated with other information and datasets. Some examples include policy documents, strategy documents and action plans; information brochures and pamphlets; industry standards and codes; and guidelines issued by departments.

Recommendation 24: That where appropriate, the Victorian Government release its public sector information in both primary and secondary formats.

8.2.1 Privacy issues

In Chapter Four the Committee recognised that ensuring the maintenance of privacy will be a critical consideration when examining whether PSI should be made available for release and/or re-use. The Committee acknowledges that a key challenge for the Government releasing primary or raw data is addressing privacy concerns and ensuring all identifying information is removed prior to its release. As noted throughout this report, it is crucial that the Victorian Government comply with the *Information*

[378] Google Australia, *Submission*, no. 54, 25 August 2008, p. 2.
[379] Carolyn Dalton, Head, Public Policy and Government Affairs, Google Australia, *Transcript of evidence*, Melbourne, 30 September 2008, pp. 2-3.
[380] Graeme Martin, Manager, Consulting, Spatial Vision, *Transcript of evidence*, Canberra, 13 August 2008, p. 4.
[381] Jose M Alonso, et al., *Improving access to government through better use of the web*, World Wide Web Consortium, 2009, p. 20.
[382] Open Australia, 'OpenAustralia.org ', viewed 27 March 2009, <http://www.openaustralia.org/>.

Privacy Act 2000 (Vic) when establishing and implementing the IMF. Particularly with re-use of raw data, public sector agencies need to be aware that the privacy legislation applies not only to data with individual's names attached but also to data where an identity can be reasonably ascertained. Once data is properly and permanently de-identified, it is no longer considered "personal information" and privacy legislation no longer applies. [383]

In his presentation to the Committee, Dr Terry Cutler raised the point that often privacy issues are used as a reason not to increase access to PSI. He believes, however, that the release and integration of discrete datasets is possible:

> …it goes to the way in which the data is stored and captured and made available. Often there are issues that we raise as obstacles and reasons why you should not do something, but I am suggesting that they are eminently addressable, and have been addressed in various Australian situations as well as in other jurisdictions. But getting those administrative frameworks right is fundamental to making a success of this.[384]

Mr Ben Searle of the Australia Government's OSDM made a similar point, stating that privacy is often cited by departments as a reason not to share information with other departments. He claimed, however, that in many cases this is a "furphy." Mr Searle also advised that the OSDM is working towards greater access to information between agencies at the aggregated level rather than at the individual unit level:

> If it was a person's health records, we would aggregate that up to some level of geography where the individual's identity was hidden but then make that information available to other agencies in support of social inclusion-type activities. That has been done over relatively quickly.[385]

While privacy should be maintained in all PSI records, the Committee notes that the release of database records could be facilitated if they were constructed in such a way as to simplify the process of removing identifying information. This could be achieved through carefully defining variables during the construction of databases, and anticipating the aggregation required for the release of databases in accordance with existing statutory privacy requirements.

Recommendation 25: That in future, and where possible, the Victorian Government develop and design databases in such a way as to facilitate the removal of identifying information if required.

8.3 Discoverability of PSI

Advocates for open access often draw attention to the role of discovery in enhancing access to PSI, with many describing the importance of 'finding

[383] Privacy Victoria, *Submission*, no. 45, 22 August 2008, p. 4.
[384] Dr Terry Cutler, Principal, Cutler & Company, *Transcript of evidence*, Melbourne, 30 September 2008, p. 5.
[385] Ben Searle, Manager, Office of Spatial Data Management, Geoscience Australia, *Transcript of evidence*, Canberra, 13 August 2008, p. 6.

tools' in the discovery process.[386] For example, the VSC stated in its submission that discovery is the starting point for ensuring simple and effective access to spatial data. According to the VSC, discovery is enhanced through two key mechanisms:

- custodians of spatial data publishing the metadata for their datasets; and
- creating data directories for publishing metadata.[387]

The Committee shares this view and believes that technical infrastructure to support the IMF should comprise the three components of custodians, metadata and data directories. As noted throughout this Chapter, the interoperability of these finding tools will ensure data sharing and exchange within and across governments, as well as between the public, private and community sectors. This point was referred to by witnesses, many of whom advised that the use of commonly agreed standards for metadata and data directories would contribute to the discovery of PSI.[388]

8.3.1 Custodianship

A key component of an effective data management system is custodianship, where an agency or individual within an agency is assigned rights and responsibilities for the acquisition and management of information on behalf of government. According to the Australian Government's custodianship guidelines, the practice of custodianship "is simply the only way of ensuring accountability for the care, maintenance and credibility of information."[389] The guidelines state that custodians should hold the following rights and responsibilities for particular information resources:

- determining priorities for data capture;
- managing and operating data acquisition and integration process;
- complying with standards;
- storing the data;
- maintaining and revising the data;
- ensuring data security;
- providing metadata;

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[386] Australian Bureau of Statistics, *Submission*, no. 63, 27 August 2008; Bureau of Meteorology, *Submission*, no. 17, 18 August 2008; Dr Peter Crossman, Assistant Under Treasurer and Government Statistician, Office of Economic and Statistical Research, Queensland Treasury, *Transcript of evidence*, Queensland, 12 August 2008; Dr Terry Cutler, Principal, Cutler & Company, *Transcript of evidence*, Melbourne, 30 September 2008; Neale Hooper, Principal Lawyer, Office of Economic and Statistical Research, Queensland Treasury, *Transcript of evidence*, Queensland, 12 August 2008; Prof Richard Jefferson, CEO, CAMBIA, *Transcript of evidence*, Canberra, 13 August 2008; Victorian Spatial Council, *Submission*, no. 41, 22 August 2008.

[387] Victorian Spatial Council, *Submission*, no. 41, 22 August 2008, p. 13.

[388] Open Source Geospatial Foundation Aust-NZ, *Submission*, no. 33, 2 August 2008; Victorian Council of Social Services, *Submission*, no. 37, 22 August 2008; Vision Australia, *Submission*, no. 71, 5 September 2008.

[389] Commonwealth Government, 'Appendix 3: Custodianship guidelines', viewed 21 March 2009, <http://www.osdm.gov.au/>.

- promoting data use;
- facilitating data access;
- administering data distribution;
- charging for data or recovering costs associated with data supply, consistent with agency and jurisdictional policies;
- consulting with users;
- preserving the data over time;
- complying with legislation, policies and guidelines.[390]

The Committee notes that PSI is created and obtained first and foremost to meet the purposes and objectives of the government. In many cases, when PSI is created there will have been little or no consideration of the potential for further use apart from in a government context. Consequently, it should be primarily the responsibility of the user of PSI to determine whether the information or data suits his or her purposes.

In this context, custodians should provide users with statements about the source, completeness and currency of datasets. These statements should allow users to decide whether the data is suitable for their purposes, as determining "fitness for purpose" of information and data should be the responsibility of the user. Requirements for statements about PSI should also be made with reference to the indemnity issues discussed in Chapter Four of this report.

The VSC advised the Committee that the basis for the management of all spatial data in Victoria is custodianship.[391] The VSC's *Spatial information custodianship guidelines* state that custodianship provides accountability for information products, and identifies authoritative sources that provide users with a measure of consistency and certainty.[392] The guidelines outline the principles of custodianship, which were originally detailed in ANZLIC's *Guidelines for custodianship* but have been rewritten to suit the Victorian context. The principles are:

1. trusteeship – custodians do not own data but hold it in trusteeship on behalf of the community;

2. standards – custodians, in consultation with users, are responsible for defining appropriate standards;

3. maintenance of data – custodian organisations, in consultation with users, must prepare and implement plans for the collection, conversion and maintenance of data;

4. authoritative source – the custodian becomes the authoritative source for the dataset in its care;

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[390] Commonwealth Government, 'Appendix 3: Custodianship guidelines', viewed 21 March 2009, <http://www.osdm.gov.au/>.
[391] Victorian Spatial Council, *Submission*, no. 41, 22 August 2008, p. 9.
[392] Victorian Spatial Council, *Spatial information custodianship guidelines*, Department of Sustainability and Environment, Melbourne, 2006, p. 9.

5. accountability – the custodian is accountable for the integrity of the data in its care;

6. data collection – collection or conversion of information can only be justified in terms of a custodian's business needs; and

7. maintain access – a custodian must maintain access to the datasets in its care at the level agreed with users.[393]

The Committee agrees with each of these principles and is of the view that they could easily apply to custodians responsible for the management of all categories of PSI. Overall, the Committee believes the concept of custodianship is an effective way to manage the Victorian Government's PSI and it should be incorporated into the IMF as a core policy.

Recommendation 26: That the Victorian Government develop and implement a custodianship policy as a mechanism to manage its information and data.

Two main models for the custodianship of PSI were considered by the Committee – centralised and decentralised. Under the centralised model one government department retains full control of all government materials, and is responsible for the management and release of those materials. Under the decentralised model nominated custodians in each department retain responsibility for materials produced or held by the department.

A decentralised network of custodians is the preferred option for custodianship as responsibility for PSI management would remain with the departments that are most familiar with it. Consequently, effort required to implement the custodianship policy across the Victorian Government will be minimised. By contrast, a centralised custodianship model would require the transfer of knowledge about specific PSI to a central department, probably at substantial cost and/or with a loss of expertise about the PSI.

A decentralised model will be more manageable in the long-term as data custodians within departments will typically only have responsibility for one or two datasets. The centralised model, on the other hand, would require that data custodians be responsible for a large number of datasets, many of which may not relate to one another. This would result in a substantial workload for custodians, which could reduce the level of resourcing allocated to maintaining the quality of data.

Recommendation 27: That the custodianship policy be based on the decentralised model where the management of information and data is retained in individual departments.

The Committee recognises that a level of consistency is required in the way individual departments implement the custodianship policy. Drawing on the experiences of the Australian Government and the VSC, the Committee proposes that the Government develop custodianship

[393] Victorian Spatial Council, *Spatial information custodianship guidelines*, Department of Sustainability and Environment, Melbourne, 2006, pp. 10-12.

guidelines to accompany the IMF. Guidelines should describe the roles and responsibilities of data custodians, such as ensuring that databases are designed to facilitate removal of identifying information as proposed in Recommendation 25, providing descriptions of data, and indicating whether materials are suitable for release. As noted throughout this report, the Committee does not believe it is the role of data custodians to anticipate which PSI will be of most benefit if made accessible to the public.

Recommendation 28: That the Victorian Government develop custodianship guidelines to assist departments implement and maintain the custodianship policy.

The Committee is aware that the custodianship policy will require high level commitment if it is to be effectively implemented by the Victorian Government. Lack of commitment was identified by some witnesses as the reason for ongoing problems with the VSC's custodianship policy. According to OSGeo-AustNZ, there is limited support for the Victorian *Spatial information custodianship guidelines*, and as a consequence the guidelines do not appear to have been widely adopted by Government agencies responsible for the management of spatial information. To overcome this issue, OSGeo-AustNZ suggested that custodianship of spatial datasets be allocated to senior management and that it be monitored through the performance management process.[394] Ms Yvonne Thompson of the ESTA claimed custodianship requires high level commitment and a mandate by the Victorian Government and within the custodian organisation. This would help ensure that data standards are enforced and data elements are maintained by the appropriate officer.[395]

The Committee shares the view that senior management, such as branch directors or equivalent positions, should be accountable for the availability and quality of PSI. However, it also believes that responsible custodians should remain at the officer level as they are the ones who work directly with databases, and will have more opportunities to amend and update them. As with any existing quality assurance processes in government, the Committee expects that senior managers will implement measures to ensure all information and data within their portfolio are maintained by custodians to a high standard.

Finding 22: High level commitment from the Victorian Government and within each of its departments is required to ensure the successful implementation of the custodianship policy.

8.3.2 Metadata

The Committee observed strong support for the use of metadata as a mechanism to facilitate discovery of PSI. Metadata is referred to as "data about data" as it provides a structured summary about materials. According to the VSC, metadata provides users with information about:

[394] Open Source Geospatial Foundation Aust-NZ, *Submission*, no. 33, 2 August 2008, p. 10.
[395] Yvonne Thompson, Manager, Emergency Services Telecommunications Authority, *Supplementary evidence*, 27 November 2008, p. 15.

> …the accuracy of source datasets and their processing history; projections and scales; descriptions of the content, quality and geographic extent of the dataset so potential users can assess its suitability for their purposes; and custodian contact information.[396]

During the course of the Inquiry, the Committee became increasingly aware of how the benefits of an open access policy for the Victorian Government will be compromised without metadata, as it is the metadata that makes information and data discoverable in the first place. The availability of metadata also has the benefit of providing users with a seamless method for accessing materials. Other benefits associated with the adoption of metadata include:

- allowing users to locate materials without needing a detailed knowledge of the information or data in question or organisational structures;
- providing a consistent national approach for accessing materials;
- providing organisations with consistent information management procedures; and
- facilitating a rich and competitive environment for dissemination of all types of materials.[397]

Advocates for metadata advised the Committee of its importance, even in circumstances when materials have restricted access. Dr Crossman told the Committee:

> …people should know what you have got; that you do have data relating to a particular thing. This is a very important principle. Custodians, for example, cannot know the potential uses. These are unforecastable. You have to let the users know what exists, what the quality is like, what the access arrangements are.[398]

Dr Crossman also advised that being transparent with metadata does not necessarily mean that users can access it. Ms Anne Horn, University Librarian at Deakin University made a similar point to the Committee, stating that it is useful to have a description of a document even if it is not accessible:

> I think the first thing of the commitment to having the information known is that there is an overarching principle that we want the information to be discoverable. Whether it is able to be accessed and reused is another matter.[399]

The Committee acknowledges the importance of metadata in assisting users to discover materials quickly and efficiently. The production of

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[396] Victorian Spatial Council, *Submission*, no. 41, 22 August 2008, p. 13.
[397] National Archives of Australia, 'AGLS metadata element set ', viewed 15 October 2008, <http://www.naa.gov.au>.
[398] Dr Peter Crossman, Assistant Under Treasurer and Government Statistician, Office of Economic and Statistical Research, Queensland Treasury, *Transcript of evidence*, Queensland, 12 August 2008, p. 5.
[399] Anne Horn, University Librarian, Deakin University, *Transcript of evidence*, Melbourne, 27 October 2008, p. 5.

metadata should be a key characteristic of any open access policy, and in particular the IMF. Where appropriate, the Committee proposes that the establishment of a metadata record for the majority of the Victorian Government's PSI be mandatory across all departments.

Recommendation 29: That the Victorian Government prospectively establish metadata records for most public sector information.

8.3.2.1 Metadata standards

ISO 19115

In the first half of this Chapter, the Committee noted that the use of open standard formats for data storage and delivery is crucial to achieve interoperability across data management systems. For this reason, it is important that open and commonly agreed standards for metadata frameworks are adopted. In the context of spatial data, the ISO developed the ISO 19115 as part of its ISO 19100 series, which provides a common structure for the description of spatial datasets in order to facilitate discovery. This standard has been adopted throughout the world, including by Standards Australia and Standards New Zealand and is considered best practice among the spatial information industry.

The ANZLIC developed and is continuing to refine the *ANZLIC Metadata profile guidelines* to assist organisations comply with the ISO standard and to promote interoperability between spatial information communities in Australia, and across the world. The profile details each of the metadata elements and establishes common metadata terminology, definitions and extension procedures.[400] In November 2007, the Spatial Data Management Group endorsed the adoption of the ANZLIC metadata profile for use by Australian Government agencies.[401] In Victoria, Spatial Information Infrastructure at the Department of Sustainability and Environment also promotes use of the ISO 19115 standard, and is currently working with ANZLIC to further refine the ANZLIC metadata profile guidelines.

AGLS metadata standard

A key metadata standard for use in Australia is the Australian Government Locater Service (AGLS) metadata standard, which is derived from the *Dublin core metadata element set* (DCMES), the international online resource discovery standard. The DCMES comprises fifteen element descriptions and was formally endorsed by the ISO as the ISO 15836. The AGLS expands on the DCMES, comprising the 15 DCMES elements and four additional elements designed specifically for the Australian context. In developing the AGLS, the objective of the working group was to:

> …produce a set of metadata elements which would improve the visibility, availability and interoperability of government information and services

[400] ANZLIC Metadata Working Group, *ANZLIC metadata guidelines: core metadata elements for geographic data in Australia and New Zealand* ANZLIC, Belconnen, 2001.
[401] Office of Spatial Data Management, 'ANZLIC metadata profile', viewed 1 April 2009, <http://www.osdm.gov.au>.

> through the provision of standardised Web-based resource descriptions which enable users to locate the information or service that they require.[402]

In 2002, Standards Australia issued the AGLS as the Australian Standard (AS) 5044.[403] While the AS 5044 requires the use of six mandatory elements to create an AGLS metadata record, the Australian Government requires its agencies use additional elements to support any future initiatives that may require comprehensive metadata descriptions. The nineteen AGLS elements are detailed in Appendix Six of this report.

As with all metadata, the AGLS metadata is written in a standard syntax to allow it to be read and understood by search engines. The AGLS metadata uses both the HTML and XML protocols, although the Resource Description Framework (RDF) in XML is now the preferred syntax because it is a more sophisticated markup language and offers greater flexibility than HTML.[404]

The Committee notes there have been moves to promote the use of the AGLS metadata standard across the Victorian Government, with the release of the *AGLS Victoria: Metadata implementation manual* by the Chief Technology Office in October 2006.[405] This was introduced following a recommendation in the Chief Technology Office's *Discoverability Standard* that all Victorian Government internet sites provide accurate metadata based on the AGLS standard for internet homepages; primary and secondary category pages; site map and index pages; and high profile or high demand pages as determined by departments.[406]

The Committee acknowledges work that has been carried out to develop and refine the AGLS metadata standard to ensure its suitability for use by Australian governments, and also to provide users with an efficient and open way to search for government information. The Committee is also aware of the potential for implementation of the AGLS metadata to facilitate the consistent presentation of PSI across Australia, and its interoperability with other international metadata standards, such as the DCMES. The Committee recommends that the AGLS metadata standard be the default metadata standard for the IMF. Adoption should be mandatory for all Victorian Government departments. This will ensure interoperability in the presentation of metadata across Government, and enhance the process of discovery. The interoperability of metadata records will also be achieved with the consistent storage of metadata in open coding syntaxes, such as XML and RDF. According to the Victorian AGLS metadata manual, "a standardised, correct programming syntax enables

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[402] National Archives of Australia, 'Development history', viewed 2 April 2009, <http://www.agls.gov.au>.
[403] National Archives of Australia, 'Development history', viewed 2 April 2009, <http://www.agls.gov.au>.
[404] Chief Technology Office, *AGLS Victoria: Metadata implementation manual*, State Government of Victoria, Melbourne, 2006.
[405] Chief Technology Office, *AGLS Victoria: Metadata implementation manual*, State Government of Victoria, Melbourne, 2006.
[406] Office of the Chief Information Officer, 'Discoverability standard', viewed 2 April 2009, <http://www.egov.vic.gov.au>.

search engines to identify and isolate particular information types from larges masses of complex data."[407]

Recommendation 30: That all Victorian Government departments implement the Australian Government Locater Service metadata standard.

8.3.2.2 Management of metadata

As with PSI custodianship, it is important to consider how the metadata component of the IMF will be managed. The *Australian Government implementation manual: AGLS metadata* states that while creating and maintaining good quality metadata should not be a major burden on agency resources or business processes, it does require a significant commitment on behalf of relevant agencies.[408] In its submission to the Inquiry, OSGeo-AustNZ indicated that spatial data sometimes lacks this level of commitment as metadata and metadata catalogues are not given adequate priority by managers, data custodians and spatial data maintainers. OSGeo-AustNZ noted the following issues with the management of spatial metadata:

- metadata may be entered once, but is rarely maintained;
- metadata may be entered for key datasets, but there is often other spatial data created as part of a project, or maintained in traditional business systems that are not typically recorded in metadata; and
- Australia is in the process of migrating from an old metadata standard to the international standard, however, the Victorian project has not been adequately resourced and as a consequence is taking considerable time to implement.[409]

Similarly, based on industry interviews received as part of the ACIL Tasman report into *The value of spatial information*, spatial metadata was reported as being presented in many formats and not always completely valid. It referred to a study of 5,141 metadata records of the NSW natural resource sectors, which found the records were out of date and could not be automatically upgraded to the ANZLIC 19115 profile.[410]

The issue of how metadata should be managed requires that appropriate authoring models for metadata be considered. As described for custodianship, the two key models for authoring metadata are centralisation and decentralisation. Centralised authoring requires that one central agency be responsible for the creation and maintenance of metadata records for all PSI, whereas decentralised authoring requires that each creator, contributor, owner or custodian of PSI is responsible for their metadata records.[411] The decentralised model is likely to produce higher

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[407] Chief Technology Office, *AGLS Victoria: Metadata implementation manual*, State Government of Victoria, Melbourne, 2006, p. 59.
[408] National Archives of Australia, *Australian Government implementation manual: AGLS metadata*, Australian Government, Canberra, 2006, p. 11.
[409] Open Source Geospatial Foundation Aust-NZ, *Submission*, no. 33, 2 August 2008, p. 10.
[410] ACIL Tasman, *The value of spatial information*, Canberra, 2008, p. 150.
[411] Chief Technology Office, *AGLS Victoria: Metadata implementation manual*, State Government of Victoria, Melbourne, 2006, p. 32.

quality metadata compared with the centralised model because the creation and maintenance of metadata records is at the point of expertise and ownership. To coincide with the structure of the custodianship policy, the Committee believes that allocating the role of metadata authoring at the level of data custodians is the most appropriate option for the Victorian Government.

Recommendation 31: That the authoring of metadata be based on the decentralised model where data custodians retain responsibility for the establishment and ongoing management of metadata records.

In the context of the overall management of departments' metadata records, the Victorian Chief Technology Office's manual for the implementation of the AGLS metadata advises that this should be centralised and responsibility for this role should be assigned to an individual qualified in data management, but not necessarily in web management.[412] A key role for this position would be to ensure quality of metadata records is maintained. It was suggested that for those departments with less than 200 records, all records should be checked, and with departments with more than 200 records, a random spot-check should be conducted or more important records should be targeted.[413]

Because metadata provides the means for discovery of PSI, its creation and maintenance should be identified by senior management as a key priority for all data custodians. On the basis of the proposals outlined in the Victorian AGLS manual, the Committee believes that each department should assign a data management officer to be responsible for conducting quality assurance processes for their department's metadata records.

Recommendation 32: That the Victorian Government establish a data management position within each of its departments, which holds responsibility for management and quality assurance of departments' metadata records.

In Recommendation 31 and Recommendation 32, the proposed model for the management of metadata comprises: a) data custodians, who are responsible for the establishment, authoring and maintenance of metadata records; and b) data management officers who are responsible for ensuring that quality assurance checks are in place to monitor their department's metadata records, as well as the integration of those metadata records into a centralised Victorian Government data directory (see section 8.4 for further information).

8.3.2.3 Implementation of metadata

As noted earlier, the Victorian Chief Technology Office released the *AGLS Victoria: Metadata implementation manual* in 2006 to promote the use of the AGLS metadata standard across the Victorian Government. The Committee proposes that the Victorian Government amend this manual to ensure the metadata standard is implemented consistently across

[412] Chief Technology Office, *AGLS Victoria: Metadata implementation manual*, State Government of Victoria, Melbourne, 2006, p. 31.
[413] Chief Technology Office, *AGLS Victoria: Metadata implementation manual*, State Government of Victoria, Melbourne, 2006, p. 31.

departments. The manual should be revised with consideration of the *Australian Government implementation manual: AGLS metadata,* as well as the custodianship guidelines as proposed in Recommendation 28.

Prior to the revision of the *AGLS Victoria: Metadata implementation manual*, the Victorian Government will need to decide which, if any, of the AGLS metadata elements in addition to the mandatory set will be used to describe materials. As part of this, the Government may wish to consider the incorporation of other elements not already included in the AGLS metadata standard. Aside from the mandatory elements, the Committee believes it is important that the following information be produced in each case:

- whether the material or database contains information that *may* be subject to security, privacy or third-party copyright concerns;
- an initial recommendation whether the material be restricted or released (on request) under an open content licence or a restricted licence; and
- who the custodian of the data is, and/or who is responsible for determining whether, and under what conditions, the material should be released.

Recommendation 33: That the Victorian Government amend the *AGLS Victoria: Metadata implementation manual* to accommodate requirements of the Information Management Framework.

The Victorian Government will need to secure commitment from departments that all data custodians will receive appropriate training to ensure those responsible for the creation and management of metadata understand the definition and application of each element. Data management officers will also require training to equip them with skills to conduct comprehensive quality assurance checks on metadata records. The Committee notes the recommendation included in the *AGLS Victoria: Metadata implementation manual* regarding appropriate training on the AGLS metadata standard:

> It is very easy to create bad or misleading metadata, therefore appropriate training assistance should be available to all staff required to create metadata. Where possible the training should provide a general introduction to metadata and AGLS but also to the standards, information policies and procedures that have been adopted within that agency. Well-documented guidelines, internal standards and training reduce the risk of bad quality metadata.[414]

Recommendation 34: That the Victorian Government ensure that data custodians and data management officers are provided with adequate training to support the implementation of the Australian Government Locater Service metadata standard.

[414] Chief Technology Office, *AGLS Victoria: Metadata implementation manual*, State Government of Victoria, Melbourne, 2006, p. 33.

8.4 A whole-of-government directory for Victorian PSI

One of the most critical issues to consider when improving access to PSI is the means by which information and data owned by government can be identified. The Committee has considered this issue on a number of occasions in this report, and has indicated that a comprehensive, whole-of-government directory of PSI should be developed by the Victorian Government in order to facilitate access to PSI, and to improve efficiency by promoting information dissemination within the Victorian public sector.

To further aid data discovery, the Committee proposes that the Victorian Government develop a data directory that draws together all of its metadata records. It is appropriate that this directory be searchable from a central government website, and that it also link to metadata published on individual department websites. Each department's data management officer would be responsible for ensuring that all of their department's metadata records are incorporated into the one directory.

An example of a data directory is the Australian Spatial Data Directory (ASDD), which is hosted by Geoscience Australia and comprises spatial dataset descriptions on behalf of ANZLIC.[415] The ASDD allows users to simultaneously search spatial directories maintained by Australian government agencies and commercial organisations. According to the ASDD Quarterly Technical Report for October to December 2008, there are 22 repositories within the ASDD, with a total of 32,223 dataset descriptions available for searching.[416]

The Victorian Spatial Data Directory (VSDD) is a node of the ASDD and contains over 530 datasets that originated in or may be of use in Victoria. All datasets included in the VSDD are also listed in the ASDD.[417] The Victorian spatial information industry also recently established *Data search Victoria*, a directory of spatial data that allows users to access a list of datasets by clicking on the location of an area of interest. The features of the service include:

- ability to search by geographic extent and data theme;
- preview the dataset selected;
- view the sample over a backdrop orientation layer;
- read the metadata; and
- view the contact details for the provider of the data.[418]

In its submission to the Inquiry, the Cyberspace Law and Policy Centre (CLPC) recommended that the Victorian Government analyse its PSI to determine whether it was suitable for release, and make a metadata directory available to the public:

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[415] Office of Spatial Data Management, *Submission*, no. 24, 20 August 2008, p. 8.
[416] Geoscience Australia, 'Quarterly technical report', viewed 2 April 2009, <http://asdd.ga.gov.au/>.
[417] Land Victoria, 'Spatial data directory', viewed 4 May 2009, <http://www.land.vic.gov.au>.
[418] Victorian Spatial Council, *Submission*, no. 41, 22 August 2008, p. 15.

> …agencies need to analyse the categories of potentially useful PSI they control, the information characteristics of these collections, and their condition and/or the steps needed to access it or make it available for re-use. They also need to publish this 'meta-data' about their collections in accessible networked form, and perhaps also make available tools to extract desired sub-sets, in order to maximize external access to the categories desired.[419]

One of the main challenges in the development of such a directory is determining which information held by the public sector should be included in the directory. While this would be a matter for the Victorian Government to determine, in consultation with individual departments' assessments of their own information resources, the Committee is of the opinion that as much information as possible should be captured under the directory, including those materials identified as appropriate for release and those identified as requiring restricted access.

While the Committee intends that development of the directory will facilitate commercial and public use of PSI for economic and social purposes, it is important to note that the development of a whole-of-government PSI directory will also be very useful for internal use by the Victorian public sector. Consequently, the Committee believes development of a data directory would be of immense value whether it was introduced in concert with an open access to PSI policy, or while maintaining the Victorian Government's current approach to PSI access. As noted in Chapter Two, there are likely to be significant efficiency gains to the public sector just through sharing information and data more effectively internally. The communication of information *about* information may also provide opportunities for new and innovative responses to policy problems.

As proposed in the metadata section, data custodians will be responsible for establishing and maintaining metadata records for information and data and other materials produced from now on. Data management officers will then be required to submit their department's metadata records to a centralised and searchable directory, so that a prospective directory for Victorian Government PSI is developed over time.

Recommendation 35: That the Victorian Government develop a whole-of-government public sector information (PSI) directory, and that metadata for all new PSI created within the Victorian Government be prospectively added to the directory.

8.4.1 Release of historical PSI

The Committee is aware that there is a considerable amount of historical PSI that is not currently digitised but could be of benefit if made available in digital form. Under the *Public Records Act 1973 (Vic),* most Victorian Government records that are more than 25 years old and/or are no longer required for administrative purposes are transferred to the Public Records Office Victoria (PROV).[420] The Act stipulates that all public records held at the PROV are immediately available for public access unless the responsible Minister takes action to withhold them. While most of the

[419] Cyberspace Law and Policy Centre, *Submission*, no. 68, 5 September 2008, p. 8.
[420] Public Records Act 1973 (Vic).

records are only accessible in physical form, the PROV does digitise records that are used extensively or are of high public interest. Some of the records it currently digitises include:

- photographs;
- indices and registers to assist archive searching;
- well-used and fragile materials;
- records of high public or historical interest; and
- wills and probate papers.

The Committee recognises that digitising all historical PSI will be an extremely lengthy and expensive exercise. The Committee is of the view that the availability of electronic registers and searching tools on the PROV's website is adequate to allow the Victorian community to locate historical materials. On this basis, it is important that the Victorian Government, in conjunction with PROV, maintain the quality of the electronic registers to ensure they contain relevant and updated information.

In order to facilitate implementation of a policy to improve access to PSI, the Committee has recommended the key focus for the IMF should be on information and data generated from now into the future. However, the Committee also recognises there is a great wealth of information and data already generated by the Victorian Government that may potentially hold value.

In its submission, Deakin University advised of the potential benefits associated with accessing contemporary and historical data:

> Making both contemporary and historical data sets available in raw form has the capacity to enhance relationships between researchers and the agencies housing the data, while promoting greater knowledge building, public sector accountability and collaboration. The benefits filter into teaching and learning contexts, enabling researchers to gain access to data sets under appropriate supervision, which is not always possible in light of current data management policies.[421]

Should the Victorian Government decide to implement Recommendation 2 and Recommendation 35, and should positive outcomes arise through the development of a whole-of-government PSI directory and the proactive publication of PSI, the Committee recommends that the PSI directory outlined in Recommendation 35 incorporate existing and historical documents held by the public sector as and when resources allow.

Recommendation 36: That following development of the whole-of-government public sector information directory, and as resources allow, existing and historical documents and data held by the Victorian Government be added to the directory.

[421] Deakin University, *Submission*, no. 36, 22 August 2008, p. 3.

Chapter Nine: Key points

- A public sector information (PSI) steering committee, represented by stakeholders from all departments in the Victorian Government, should be established in order to oversee, guide and implement the Victorian Government Information Management Framework (IMF).

- There is strong support for a shift towards national harmonisation in approaches to access to and re-use of PSI.

- The IMF should be widely promoted in order to maximise the commercial and social benefits of the program following effective implementation within the Victorian Government.

- The establishment of a reporting mechanism, including a complaints system could assist the Victorian Government to continue to improve departments' compliance with the IMF, as well as raise standards across the Victorian public service in the sharing and exchange of information.

Chapter 9

Chapter Nine: Supporting actions for the implementation of the IMF

The preceding Chapters have outlined the key features of the Committee's proposed Information Management Framework (IMF). As noted in Chapter Two, the objective of the framework should be the promotion and facilitation of access to and re-use of Victorian Government public sector information (PSI) across public and private sectors, and the community. Initially, the IMF should only apply to the executive branch of the Victorian Government to ensure the implementation process remains workable. The Committee also believes there is merit in other public sector agencies and entities implementing their own information frameworks, and that these could potentially be informed by the experiences of the Victorian Government.

The Committee anticipates that actions outlined below will assist the introduction and ongoing implementation of the IMF across the Victorian Government.

9.1 PSI steering committee

The Committee is of the view that a central agency should lead the development and ongoing implementation of the IMF across the Victorian Government, and that one of its key responsibilities should be the establishment and management of a PSI whole-of-government steering committee. The committee should comprise at least one representative from each department.

The Committee anticipates that the steering committee would be involved in overseeing and monitoring implementation of the IMF, in addition to assisting the lead agency determine matters such as:

- harmonisation of a systematic approach for identifying Victorian Government PSI appropriate for release, as discussed in Recommendation 2;
- liaising with the office responsible for developing the Victorian Government licensing system, as discussed in Recommendation 11**,** Recommendation 12**,** Recommendation 13**,** Recommendation 14 and Recommendation 15;
- liaising with the department responsible for developing the Victorian Government pricing policy, as discussed in Recommendation 16**,** Recommendation 17**,** Recommendation 18 and Recommendation 19;

- recommending and implementing appropriate open standard formats for data storage, as discussed in Recommendation 22;

- preparing guidelines and support material for departmental custodianship of PSI, including implementation of the AGLS metadata standard, as discussed in Recommendation 27 and Recommendation 30;

- finalising hosting arrangements for the centralised Victorian Government data directory, as discussed in Recommendation 35; and

- documenting experiences and outcomes from implementing PSI access measures, to assist implementation by other agencies and in other jurisdictions.

Recommendation 37: That the Victorian Government establish a public sector information steering committee for the purpose of overseeing, guiding and implementing the Victorian Government Information Management Framework.

9.1.1 High level commitment

Throughout this report, the Committee has drawn attention to the need for high level commitment from within the Victorian Government to ensure the successful implementation of components of the IMF. The active promotion by senior figures for the use of and compliance with the IMF will encourage public servants to prioritise it as part of their daily work processes. The Committee anticipates that this will also help achieve a cultural shift in the way the public service perceives and deals with its information and data.

On this basis, the Committee encourages the steering committee to comprise members who hold positions of authority within their own departments, which would allow them to actively promote and easily seek approval where required for implementation of the IMF. The Committee should report directly to the Minister responsible for implementation of the IMF in order to ensure that the importance of the IMF is widely recognised by public servants.

Recommendation 38: That the steering committee be comprised of senior departmental staff; and that it be required to regularly report to the Minister responsible for the Information Management Framework on the framework's implementation.

9.2 National harmonisation

Aside from overseeing and monitoring the implementation of the IMF, another key responsibility of the steering committee should be to work in consultation with other jurisdictions to ensure that, as far as possible, national harmonisation in approaches to access to and re-use of PSI is maximised.

During the course of the Inquiry, various witnesses advocated for working at a national level to develop a nation-wide policy and guiding principles on access to and re-use of PSI. For example, Mr Carl Obst, the Victorian

Regional Director of the Australian Bureau of Statistics (ABS) told the Committee:

> …we are very keen to push forward for a national approach as far as possible, and a consistent approach. The biggest benefits are likely to be gained where we are operating in an environment in which Victorian data can fit within a broader scheme of data sharing and data access across Australia.[422]

On the issue of licensing PSI, Wellington Shire stated in its submission to the Committee that while there is merit in the Victorian Government developing its own whole-of-government licensing framework, "there are national, international, social and technological forces at work which appear to be moving into the direction of a global solution."[423]

The Committee is also aware of a number of existing governmental initiatives working towards a national approach. Two key projects include the *National government information sharing strategy*, an initiative to improve sharing of data information across the jurisdictions; and the *National government information licensing framework*. Both initiatives received endorsement from the ministerial Online and Communications Council on 12 December 2008, and were referred to the Cross Jurisdictional Chief Information Officer (CJCIO) committee for examination.

Furthermore, *Venturous Australia*, the final report of the Review of the National Innovation System, recommended the establishment of an Australian national information policy to maximise the "generation and flow of ideas and information in the Australian economy."[424]

The Committee also wishes to acknowledge the growing need for all Australian governments to work together to address issues that cross state and national borders. The Committee is of the opinion that working towards a policy of national harmonisation in the sharing of information will help achieve this.

Recommendation 39: That the Victorian Government work with other jurisdictions towards national harmonisation in enhancing access to and re-use of PSI.

9.3 Public awareness of the IMF

The Committee's proposal for an IMF is largely predicted on the advantages and returns that will arise when Victorian Government PSI is provided for public use and re-use under open content licences. Ultimately, success of the IMF will depend on public servants and the wider public becoming aware of, and using the centralised data directory as a mechanism to search and locate information for potential re-use. As proposed in Recommendation 1, the release of a statement confirming the Victorian Government's commitment to open access will provide public

[422] Carl Obst, Regional Director, Victoria, Australian Bureau of Statistics, *Transcript of evidence*, Melbourne, 8 September 2008, p. 3.
[423] Wellington Shire Council, *Submission*, no. 40, 19 August 2008, p. 5.
[424] Review of the National Innovation System, *Venturous Australia*, Cutler & Company Pty Ltd, North Melbourne, 2008, p. 94.

servants and the broader community with the first indication of the Government's intentions. The Committee also recommends that the IMF be widely promoted when it becomes operational. To raise awareness of the IMF across the Victorian Government, the Government should also consider conducting in-house workshops and conferences. These awareness raising events should focus on the framework's key themes and initiatives, as well as promote more broadly the concept of open access to PSI and the benefits and concerns surrounding the re-use of such information. These workshops should target all public servants and be conducted independent of the training sessions proposed for data custodians and data management officers in Recommendation 34.

Recommendation 40: That following implementation of the Victorian Government Information Management Framework, the potential benefits to the public, commerce and Victorian public service efficiency be widely promoted.

9.4 Reporting mechanism

To support the implementation and long-term sustainability of the IMF, the Committee believes an online reporting mechanism should be established to allow both the public and public servants to provide feedback on the day-to-day operations of the IMF. The Committee believes this will assist the Victorian Government continue to improve its systems under the framework. Ongoing communication and collaboration between public servants regarding their experiences will also promote good practice and expertise.

As part of the reporting mechanism, the Committee proposes the development of an official complaint system to provide individuals with an avenue to express their dissatisfaction with departments' actions/inactions under the IMF. In the UK, the *Re-use of public sector information regulations* 2005, which aim to encourage re-use of PSI, provides an official complaint mechanism to address circumstances when public sector agencies do not supply information as requested. The complaint mechanism comprises:

- an internal complaints procedure where public sector bodies are required to establish processes for determining complaints relating to their actions under the Regulations; and

- complaints to OPSI where an individual has exhausted the above procedure or in circumstances where the public sector has failed to deal with a complaint within a reasonable time.[425]

Aside from it being enacted in legislation, the Committee believes the UK system offers a useful example that could potentially be drawn upon to inform the development of a complaint system for the current context.

The PSI steering committee should have responsibility for determining the most appropriate method to address instances when departments do not actively comply with the IMF. Consideration is required about whether

[425] The Re-use of Public Sector Information Regulations 2005 (UK).

individual departments will be responsible for addressing complaints directed at them or if it is more appropriate that an independent authority be allocated that role. The question of penalties for non-compliance also deserves consideration, although the Committee wishes to note that it does not intend for the complaints system to be punitive. Rather, it should be used as an avenue to identify and resolve any issues with the conditions for access to and re-use of PSI that continue to prevail in the Victorian Government.

If implemented appropriately, the reporting mechanism including the complaints system could act as a driver to further enhance the sharing and exchange of information across the Victorian public service.

Recommendation 41: That the Victorian Government, through the steering committee, establish a reporting mechanism for the Information Management Framework.

Chapter Ten: Key points

- Open Source Software (OSS) is software that can be redistributed and modified without the payment of fees or royalties, and for which the source code is made available.

- OSS is currently used alongside proprietary software in a wide range of environments and for diverse purposes. OSS is generating interest internationally because the licensing model appears to offer opportunities for significant Information and Communication Technology (ICT) cost savings, while offering comparable security and support as proprietary software.

- OSS and proprietary software business models generally differ, in that revenue from proprietary software is typically derived from product sales, and revenue from OSS is typically derived from the provision of services.

- The current Victorian Government ICT Procurement policy does not discriminate between OSS and proprietary software. There may be opportunities for awareness of OSS to be improved within the Victorian Government.

- The Victorian Government should ensure that software procurement processes do not discriminate against either proprietary software or OSS.

Chapter
10

Chapter Ten: Open Source Software

The Terms of Reference for this Inquiry refer to “open source licensing” as providing a potential means to enhance discovery, access to and use of government information. Given the emphasis of the Terms of Reference on the use of government and public sector information (PSI) in this context, the Committee has focused particularly on “open content licensing” of PSI. However, the Committee has also interpreted the Inquiry Terms of Reference to encompass consideration of the role and application of open source software (OSS) in government applications.

10.1 What is Open Source Software?

The concept of OSS originated in the free software movement, which was founded in the 1980s with the key objective of facilitating the distribution of free software and of requiring that the source code[426] for that software is disclosed at the point of distribution.[427] While there are a number of definitions for what comprises OSS, the Australian Government Information Management Office (AGIMO) document *A guide to Open Source Software*[428] notes that the most authoritative arbiter of what comprises OSS is the Open Source Initiative (OSI), which provides the following criteria for defining OSS:

Text Box 3: Open Source Initiative criteria for defining OSS[429]

Open source doesn't just mean access to the source code. The distribution terms of open-source software must comply with the following criteria:

1. Free Redistribution

The license shall not restrict any party from selling or giving away the software as a component of an aggregate software distribution containing programs from several different sources. The license shall not require a royalty or other fee for such sale.

2. Source Code

The program must include source code, and must allow distribution in source code as well as compiled form. Where some form of a product is

[426] Source code is the human readable programming instructions written by software developers. Generally source code is compiled into binary (machine readable) code, which is what is actually executed by computers.
[427] Brian Fitzgerald and Nic Suzor, 'Legal issues for the use of free and open source software in government', viewed 28 February 2008, <http://www.austlii.edu.au>.
[428] Australian Government Information Management Office, *A guide to open source software for Australian Government agencies*, Australian Government Department of Finance and Administration, Canberra, 2005, p. 9.
[429] Open Source Initiative, 'The Open Source definition', viewed 16 April 2009, <http://www.opensource.org>. *[sic]*

not distributed with source code, there must be a well-publicized means of obtaining the source code for no more than a reasonable reproduction cost preferably, downloading via the Internet without charge. The source code must be the preferred form in which a programmer would modify the program. Deliberately obfuscated source code is not allowed. Intermediate forms such as the output of a preprocessor or translator are not allowed.

3. Derived Works

The license must allow modifications and derived works, and must allow them to be distributed under the same terms as the license of the original software.

4. Integrity of The Author's Source Code

The license may restrict source-code from being distributed in modified form only if the license allows the distribution of "patch files" with the source code for the purpose of modifying the program at build time. The license must explicitly permit distribution of software built from modified source code. The license may require derived works to carry a different name or version number from the original software.

5. No Discrimination Against Persons or Groups

The license must not discriminate against any person or group of persons.

6. No Discrimination Against Fields of Endeavor

The license must not restrict anyone from making use of the program in a specific field of endeavor. For example, it may not restrict the program from being used in a business, or from being used for genetic research.

7. Distribution of License

The rights attached to the program must apply to all to whom the program is redistributed without the need for execution of an additional license by those parties.

8. License Must Not Be Specific to a Product

The rights attached to the program must not depend on the program's being part of a particular software distribution. If the program is extracted from that distribution and used or distributed within the terms of the program's license, all parties to whom the program is redistributed should have the same rights as those that are granted in conjunction with the original software distribution.

9. License Must Not Restrict Other Software

The license must not place restrictions on other software that is distributed along with the licensed software. For example, the license must not insist that all other programs distributed on the same medium must be open-source software.

10. License Must Be Technology-Neutral

No provision of the license may be predicated on any individual technology or style of interface.

Originally, protection of OSS was ensured through introduction of the General Public Licence (GPL), which requires anyone who modifies source code to disclose their modifications to any further recipients of the

software.[430] As a result, all improvements are shared among the broader community.

Over time OSS developed, with concerns regarding the potential lack of commercial interest in free software leading to the establishment of the OSI. The OSI is a non-profit organisation that conceptualised OSS and the business models that allow the commercial uptake of such software.[431] As noted in Text Box 3 above, the OSI outlines the basic licence conditions that developers, distributors and users of OSS must release software under for it to be considered open source. Basic licence conditions allow users to (among other things):

- Use the software for any purpose;
- Make copies of the software for any purpose;
- Access or modify the source code of the software for any purpose; and
- Without payment of a royalty or other fee, distribute copies of:
    - the software (including distributing the software as part of an aggregate distribution containing software from several different sources); or
    - a derived or modified form of the software (either in complied form or as source code), under the same terms as the licence applying to the software. [432]

10.1.1 Emerging interest in OSS

Open source software has attracted the attention of governments and businesses internationally largely because the model appears to offer opportunities for significant ICT cost savings. This is principally because OSS can be distributed and copied within an organisation for no fee, and as a consequence the host organisation can save money by not having to pay a per-machine or per-user fee for the use of the software.

For OSS with large development communities, updates and bug fixes are available with a similar, or better, response time than is available for comparable proprietary software. There is also potential for modifications to be made to OSS without the host organisation needing to seek express permission from the software owner, so that OSS may prove cost effective in organisations that require customised software.

10.1.2 Current uses of OSS

While OSS programs exist for most, if not all, of the applications serviced by propriety software, there has been a tendency to date for OSS to be implemented in high-end machines and server environments, rather than in consumer desktops and workstations. While OSS operating systems and

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[430] Brian Fitzgerald and Nic Suzor, 'Legal issues for the use of free and open source software in government', viewed 28 February 2008, <http://www.austlii.edu.au>.
[431] Brian Fitzgerald and Nic Suzor, 'Legal issues for the use of free and open source software in government', viewed 28 February 2008, <http://www.austlii.edu.au>.
[432] Australian Government Information Management Office, *A guide to open source software for Australian Government agencies*, Australian Government Department of Finance and Administration, Canberra, 2005, p. 9.

programs exist for desktops, these markets have been dominated by propriety software – particularly software produced by Microsoft.

Nevertheless, OSS is used in a wide range of environments and in diverse institutions. According to AGIMO, OSS is emerging as a common choice for major ICT users in the public and private sectors in the following areas:

- Network infrastructure: including software for domain name service (DNS), IP address allocation (DHCP), web services, application services, proxy servers, directories (LDAP), packet shaping and communications optimisation;
- Database servers: prominent open source database servers include Firebird SQL (formerly Interbase), Ingres, MaxDB (formerly Adabas), MySQL and PostgreSQL. In addition, many proprietary database servers are now available on open source operating systems;
- Security systems: including firewalls, intrusion detection and analysis, honeypots, IPSEC and other virtual private network (VPN) systems, packet-sniffing and analysis, antivirus software and anti-spam filtering;
- Internet and intranet publishing: including web servers, content management system (CMS) platforms and workflow management tools;
- Document management: including automatic electronic document capture systems, revision management systems, data capture technologies and archiving systems;
- Email and communications: including numerous solutions for email, general groupware (group calendaring, shared address books, reminders, public folders) and instant messaging servers;
- Application servers: including widely used web application servers based on PHP, Perl, Python and ZOPE scripting tools, Java and Java 2 Enterprise Edition (J2EE) servers such as JBOSS and the Mono and dotGNU .NET open source application servers. In addition, many proprietary application servers now run on open source operating systems;
- File and print servers: tools covering most major file sharing protocols, such as Unix NFS, Microsoft SMB/CIFS and Novell Netware NCP;
- Storage: several network-attached storage appliances are built primarily on open source platforms;
- Limited-function workstations: fixed-use workstations that provide basic web, email, terminal access and office productivity functionality for call centres, kiosks and similar uses;
- High-performance computing: this includes single-image systems with multiple microprocessors (vertical scaling), clusters based on large numbers of low-cost systems (horizontal scaling) and other types of supercomputers; and
- High-performance technical workstations: including multi-processor, 64-bit and large memory systems for computation-intensive applications

> such as scientific analysis, meteorology, modelling, 3D computer-generated imagery (CGI) and video-processing functions.[433]

In practice, these applications encompass a significant proportion of the software needs of government. As noted above, there has also been rapid development of OSS workstation applications and operating systems, so that there is potential for widespread deployment of OSS across government. However, as the Committee has also noted, software should be evaluated for use on all of its features, and in any particular circumstance either proprietary or OSS may be most appropriate.

10.1.3 Current use of OSS in government

OSS is used in a wide range of contexts by governments internationally. Recently there has been a move towards expanding use of OSS by some governments, with Malaysia and Brazil in particular moving actively towards widespread implementation of OSS in government. There are also some high-profile examples of OSS use in other jurisdictions, including by the United States (US) Army for its operations; and by the French Gendarmerie, which incrementally migrated from Microsoft products to Open Office, Firefox and Thunderbird, and finally to the Ubuntu Linux operating system, allowing it to reduce its IT budget by 70 per cent.[434]

While there is increasing interest in the use of OSS in government internationally, there has not been widespread interest in the introduction of mandatory measures for OSS procurement and implementation, nor for preferential treatment of OSS in public sector procurement.[435] Latin America has favoured preferred procurement policies, while research programs have been more popular in Asia and Europe.[436] Preferential or mandatory procurement policies are also found more frequently at local government level than at state or federal levels.[437]

10.1.3.1 Government use of OSS in Malaysia

In 2004, the Malaysian Government issued its OSS Master Plan, according to which public sector agencies were required to identify opportunities for implementing OSS within the following six solution areas:

- Workload consolidation
- High performance computing
- Distributed enterprise
- Application solution
- Infrastructure solution

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[433] Australian Government Information Management Office, *A guide to open source software for Australian Government agencies*, Australian Government Department of Finance and Administration, Canberra, 2005, pp. 10-11.
[434] Gijs Hillenius, 'Gendarmerie saves millions with open desktop and web applications', *Open Source Observatory and Repository*, 10 March 2009, viewed 6 April 2009, http://www.osor.eu.
[435] James A Lewis, *Government Open Source Policies*, CSIS, Washington, DC, 2007.
[436] James A Lewis, *Government Open Source Policies*, CSIS, Washington, DC, 2007.
[437] James A Lewis, *Government Open Source Policies*, CSIS, Washington, DC, 2007.

- Desktop solution.[438]

The objectives of the OSS Master Plan were to:

- Reduce the total cost of ownership
- Increase freedom of choice for software usage
- Increase interoperability among systems
- Increase growth of the ICT industry
- Increase growth of the OSS industry
- Increase growth of the OSS user and developer community
- Reduce the digital divide.[439]

Public sector agencies were required to base OSS introduction on the following guiding principals, also derived from the OSS Master Plan:

- Fit for purpose in terms of functionality, the technology platform and user requirements as a whole.
- Least disruptive to operations specifically in relation to the Public Sector agency's technical infrastructure, users and day-to-day operations.
- Co-exist with other legacy proprietary systems in the current environment.
- Leverage on existing facilities, hardware, software and expertise. Skills of existing resources should be enhanced through OSS training and knowledge.
- Not driven or controlled by hardware or software vendors. Government Agency should seek to gradually achieve independence from hardware and software vendor(s) by cultivating OSS skills and expertise.[440]

In April 2009, the Malaysian Government reported that 63.81 per cent of government agencies had adopted OSS, with 52.9 per cent implementing OSS in back-end infrastructure and 49.45 per cent implementing OSS for desktops.[441] Reported savings to the Malaysian Government to that date were reported to be MYR $10.6 million (AU $4.1 million) during phase one of the policy implementation (2004-2006) and MYR $36.6 million (AU $13.9 million) to date in the second phase of implementation (2007-2010).

While adoption of OSS in Malaysia has been extensive, there is little documentation available on whether any problems have been experienced moving users from the software they had been using previously to OSS.

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[438] Government of Malaysia, *Open Source Software Implementation Guidelines*, Kuala Lumpur, 2004, p. 6.
[439] Government of Malaysia, *Open Source Software Implementation Guidelines*, Kuala Lumpur, 2004, p. 3.
[440] Government of Malaysia, *Open Source Software Implementation Guidelines*, Kuala Lumpur, 2004, p. 6.
[441] Government of Malaysia, 'OSS Implementation in Malaysia', viewed 18 April 2009, <http://knowledge.oscc.org.my>.

Experiences from Malaysia may, however, prove instructive to other governments when considering potential implementation of OSS.

10.1.3.2 Government use of OSS in Brazil

During the period 1999 to 2003, legislation had been introduced in Brazil seeking to mandate the use of OSS by the public sector, although none of these were approved.[442] In 2003, following the election of Luis Inácio Lula da Silva, the Brazilian Government adopted a strong policy position favouring the use of OSS by the public sector. In concert with programs to provide computers to a wider range of citizens, the Brazilian Government endorsed the use of OSS as a means to produce cost savings, and to reduce reliance on proprietary software imports.[443] The Government encouraged the public sector to migrate from proprietary operating systems and software towards OSS, and was one of the first countries to require any company or research institute receiving government funding for software development to licence it as OSS.[444]

Use of OSS in Brazil has increased significantly along with these initiatives. The strong government policy in favour of OSS has also led some proprietary software providers to reduce the price of their products in the Brazilian market.

By 2005, seven of 22 federal ministries were reported to use OSS. A range of public sector services and corporations have also adopted OSS platforms, including the electoral body, the army, the state-owned bank, the postal service, the state oil company and the national statistics agency.

While implementation of OSS in Brazil has increased along with government support, adoption within the public sector is by no means universal to date. In particular there has been some resistance both within and outside the public sector to mandate for OSS implementation, and furthermore, some commentators have suggested that government financial and other support for the transition was not sufficient to produce universal adherence to the policy.[445]

10.1.3.3 Government use of OSS in the UK

In 2004, the UK Government articulated its Open Source policy, which outlined measures that the UK Government would require its agencies to undertake in order to ensure that OSS was considered during ICT procurement. The policy also provided for OSS development to be considered when the UK Government contracted for software development. The key decisions of the policy follow:

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[442] Charles Leadbetter, 'Brazil and Open Source', viewed 12 April 2009, <http://www.charlesleadbeater.net>, p. 1.
[443] Todd Benson, 'Brazil: Free software's biggest and best friend', *New York Times*, 29 March 2005, viewed 10 April 2009, http://www.nytimes.com; Steve Kingstone, 'Brazil adopts open-source software ', viewed 18 April 2009, <http://news.bbc.co.uk/>.
[444] Todd Benson, 'Brazil: Free software's biggest and best friend', *New York Times*, 29 March 2005, viewed 10 April 2009, http://www.nytimes.com; Charles Leadbetter, 'Brazil and Open Source', viewed 12 April 2009, <http://www.charlesleadbeater.net>, p. 1.
[445] Bruce Byfield, 'Brazil's FOSS utopia image at risk', viewed 17 April 2009, <http://www.linux.com>; Charles Leadbetter, 'Brazil and Open Source', viewed 12 April 2009, <http://www.charlesleadbeater.net>, p. 2.

- UK Government will consider open source solutions alongside proprietary ones in IT Procurements and that contracts would be awarded on a value for money basis.
- UK Government will only use products for interoperability that support open standards and specifications in all future IT developments.
- UK Government will seek to avoid lock-in to proprietary IT products and services.
- UK Government will consider obtaining full rights to bespoke software code or customisations of COTS (Commercial Off The Shelf) software it procures wherever this achieves best value for money.
- Publicly funded R&D projects which aim to produce software outputs shall specify a proposed software exploitation route at the start of the project. At the completion of the project, the software shall be exploited either commercially or within an academic community or as OSS.[446]

Since the articulation of this policy OSS has become more widely used within the UK public sector. Recently the UK Minister for Digital Engagement announced that among OSS uptake in the UK public sector:

- 50 per cent of main departmental websites were using Apache as a core web server;
- 35 per cent of National Health Service (NHS) organisations were expected to be supported on Linux infrastructure; and
- OSS was used in major mission critical systems such as Directgov (the official government website for citizens) and Electronic Vehicle Licensing.[447]

The development of OSS utilisation within the UK public sector has been supported by a number of internal and external factors, including the creation of a government IT profession; the adoption of techniques and cultures of open source into other government functions, such as improved access to PSI; the development of robust and stable enterprise class business models for implementation and support of OSS solutions; and improved experience of government departments with OSS, including better understanding of the commercial, cost, licensing and risk models associated with OSS.[448]

Consequently the UK Minister for Digital Engagement released an action plan for government in 2009 that strongly supports the use of open standards by government, seeks to ensure that OSS products and services are not disadvantaged in tenders to government, and requires that "where there is no significant overall cost difference between open and non-open source products, open source will be selected on the basis of its additional

[446] Office of Government Commerce, *Open Source Software: Use within UK Government, Version 2*, UK Government, London, 28 October 2004, p. 4.
[447] UK Minister for Digital Engagement, *Open Source, Open Standards and Re-Use: Government action plan*, UK Government, London, 2009, p. 3.
[448] UK Minister for Digital Engagement, *Open Source, Open Standards and Re-Use: Government action plan*, UK Government, London, 2009, p. 3.

inherent flexibility."[449] The action plan builds on the Minister's observation that "over the past five years many government departments have shown that Open Source can be best for the taxpayer – in our web services, in the NHS and in other vital public services."[450]

10.1.3.4 Government use of OSS in other Australian jurisdictions

The Committee received evidence that OSS was currently being used in some government departments in other jurisdictions. In the Australian Government, the Committee was told that OSS was used by 45 agencies, including in defence and intelligence agencies,[451] and in the Australian Bureau of Statistics, Bureau of Meteorology and Centrelink[452]. All of the Australian States and Territories have some instances of OSS within departments and agencies.[453] In most cases OSS has been implemented in back end applications, such as in NSW, where the Department of State and Regional Development has migrated from NetWare systems to open source Linux.[454]

The Cyberspace Law and Policy Centre (CLPC) informed the Committee that NSW has had an open source panel since 2005, and undertook a rollout of OSS for selected agencies from 2006. On 26 October 2006, the NSW Minister for Commerce referred to the creation of the open source panel's website, which would "act as a central repository for agencies wishing to know more about open source software and for open source code that is developed by agencies."[455] However, as of May 2009, this website (www.opensource.nsw.gov.au) appears not to be active. In its submission to the Inquiry, the CLPC noted that in the NSW open source project, "there were reports that other take-up was more limited than expected. Information and awareness were cited as critical."[456]

The ACT has introduced legislation to require government entities to consider OSS during procurement, and to avoid procuring software that does not comply with open or ISO standards.[457] The relevant section under the *Government Procurement (Principles) Guideline Amendment Act 2003 (ACT)* states:

> 6A Principle about procurement of computer software
>
> (1) In the procurement of computer software, a Territory entity should, as far as practicable—

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[449] UK Minister for Digital Engagement, *Open Source, Open Standards and Re-Use: Government action plan*, UK Government, London, 2009, p. 6.
[450] UK Minister for Digital Engagement, *Open Source, Open Standards and Re-Use: Government action plan*, UK Government, London, 2009, p. 1. (emphasis in original).
[451] Red Hat Asia Pacific, *Submission*, no. 50, 22 August 2008, p. 6.
[452] Patrick Callioni, Division Manager/First Assistant Secretary, Australian Government Information Management Office (AGIMO), *Transcript of evidence*, Canberra, 13 August 2008, p. 7.
[453] Red Hat Asia Pacific, *Submission*, no. 50, 22 August 2008, p. 6.
[454] Rodney Gedda, 'Australian department to switch from NetWare to Linux', viewed 18 April 2009, <http://www.networkworld.com>.
[455] NSW Legislative Council Hansard, Parliament of New South Wales, Sydney, 26 October 2006, p. 3522.
[456] Cyberspace Law and Policy Centre, *Submission*, no. 68, 5 September 2008, p. 17.
[457] Cyberspace Law and Policy Centre, *Submission*, no. 68, 5 September 2008, p. 17.

> (a) consider open source software; and
>
> (b) avoid the procurement of—
>
> (i) software that does not comply with open standards or
>
> standards recognised by the ISO; and
>
> (ii) software for which support or maintenance is provided only by an entity that has the right to exercise exclusive control over its sale or distribution.[458]

10.1.3.5 Government use of OSS in Victoria

The Committee was informed by Red Hat Asia Pacific that a number of Victorian Government departments or statutory authorities currently use Red Hat Enterprise Linux or JBoss (an open source Java EE-based application server), including the Department of Education and Training, the Department of Primary Industries, the Department of Innovation, Industry and Regional Development, the Department of Human Services and the Victorian WorkCover Authority.[459] In 2006, IT Wire reported that the Department of Justice had deployed 120 thin client Linux-based desktops and servers, with OSS application such as Firefox and Open Office installed on these machines.[460]

While the Committee did not receive evidence about the use of OSS across the Victorian Government, the Committee is aware that the Department of Human Services uses a range of OSS in its mid-range hosting environments, which are designed to host mission-critical applications. Software used in this context includes Suse Enterprise Linux, Solaris, sedoo, putty, python, Apache, Sidu, OpenSSH, bind, NCFTP & Java.

10.1.4 The open source industry in Australia

A recent study of the open source industry in Australia conservatively estimated earnings in the industry of $500 million, with more than half of those earnings directly derived from the development of, or services provided to, OSS.[461] While most open source industry participants provide services for open source and proprietary software, 46 per cent of the industry obtains 70 per cent of revenue from open source related activities.[462] One of the main sources of income for businesses in the open software industry is software development, with 43 per cent of companies claiming software development as their primary source of income. According to the study:

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[458] Act Government Procurement (Principles) Guideline Amendment Act 2003 (ACT), section 4.
[459] Red Hat Asia Pacific, *Submission*, no. 50, 22 August 2008, p. 6.
[460] Stan Beer, 'Cybersource in desktop Linux deal with Victorian Government', viewed 18 April 2009, <http://www.itwire.com/>.
[461] Waugh Partners, 'The Australian open source industry & community report 2008', viewed 15 March 2009, <http://census.waughpartners.com.au>, p. 9.
[462] Waugh Partners, 'The Australian open source industry & community report 2008', viewed 15 March 2009, <http://census.waughpartners.com.au>, p. 9.

> [this OSS] commercial software development capacity, built on robust and inexpensive Open Source platforms, represents a huge opportunity for Australian business and government.[463]

Around 45 per cent of respondents to the survey obtained revenue from export markets, principally through the provision of computer and information services.[464] This accounted for revenue of around $60 million, with most of the OSS industry exporters expecting growth in web and embedded development.[465]

10.2 OSS compared with proprietary software

> When we talk about open source, proprietary software and everything else we are really talking about the licensing; we are not talking about the software itself. There is poor proprietary software and there is poor open source software. It is important to distinguish between the licensing of software and the software itself.[466]

The key difference between OSS and proprietary software is not the software itself, but the conditions under which it is licensed. As far as the actual execution of software on a machine is concerned whether the software in question is open source or proprietary is irrelevant. Similarly, as the distinction between OSS and proprietary software is essentially legal, rather than technological, there are no inherent obstacles to running OSS and proprietary software in the same environment at the same time.

Under both OSS and proprietary software models, copyright is owned by developers of the source code. In practice there are often a number of contributors to OSS development, and as a consequence a number of copyright owners. To simplify ownership of OSS, some OSS projects require all contributors to allocate their copyright to a central entity, which then acts as the guardian of the software.[467]

The general understanding of 'proprietary' in regard to software is that it has one owner (which is in many cases a corporation) that exercises control over a wider range of actions by users of that software than is typically the case for OSS. Open source licences do not seek to control or restrict how users use the software but rather place conditions on redistribution of, and continued access to, the source code of the software.[468] By contrast, source code is not generally made available to users of proprietary software.

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[463] Waugh Partners, 'The Australian open source industry & community report 2008', viewed 15 March 2009, <http://census.waughpartners.com.au>, p. 9.
[464] Waugh Partners, 'The Australian open source industry & community report 2008', viewed 15 March 2009, <http://census.waughpartners.com.au>, p. 21.
[465] Waugh Partners, 'The Australian open source industry & community report 2008', viewed 15 March 2009, <http://census.waughpartners.com.au>, p. 21.
[466] Paul Russell, IBM Linux Technology Centre, *Transcript of evidence*, Canberra, 13 August 2008, p. 2.
[467] Australian Government Information Management Office, *A guide to open source software for Australian Government agencies*, Australian Government Department of Finance and Administration, Canberra, 2005, p. 46.
[468] Australian Government Information Management Office, *A guide to open source software for Australian Government agencies*, Australian Government Department of Finance and Administration, Canberra, 2005, p. 9.

10.2.1 The effects of licensing on software use

While there are no intrinsic differences between OSS and proprietary programs, licensing conditions for software can and do have a substantial effect on the ways that consumers and developers can subsequently use the software.

10.2.1.1 Proprietary software licensing conditions

As noted above, in all proprietary licensing models, the owners of the software maintain their ability to extract commercial return from the product by imposing restrictions on the ways in which the software can be used. Generally, owners of proprietary software obtain revenue by selling copies of their software directly to users, and consequently, financial return from software is directly proportional to the number of units sold.[469] In most cases, the owner of the software does not allow users to copy the software or to redistribute it, exercising his or her rights under copyright law to ensure this does not happen. Frequently measures are also implemented within the software to prevent unauthorised copying by users.

Some business models for proprietary software allow copying and redistribution of the software, but build time limits or other restrictions into the software that can only be legally removed through the purchase of registrations or 'unlocking' codes from the proprietor. Software distributed under this proprietary model is usually referred to as 'shareware'.

Apart from these basic models for obtaining revenue from proprietary software, a number of other conditions are frequently imposed by the owner of proprietary software in order to obtain revenue from the product, a proportion of which is generally allocated to further development of software, and of course to service and maintenance activities. Generally, licensing restrictions for proprietary software are directed at preventing the proliferation of unauthorised use of the software (such as through copying) in order to obtain revenue from the sale of additional products.

Under the proprietary software model, some proprietors bundle software use rights for consumers with service and maintenance agreements, although this is not always the case. Because the proprietor also owns copyright on the software, there is also potential to restrict access to improvements and fixes to users, as these are separate products to the original software purchased by the consumer.[470] Maintenance and other services are generally offered for enterprise-scale software implementations, and may provide an important (or even principle) revenue stream under the proprietary software model. Due to the restrictions noted above, there may be few alternative service providers available to customers, which may restrict competition in the market for software services. This is not always the case however, and with popular software there is often a competitive market for software services.

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[469] Paul Russell, IBM Linux Technology Centre, *Transcript of evidence*, Canberra, 13 August 2008, p. 10.
[470] Paul Russell, IBM Linux Technology Centre, *Transcript of evidence*, Canberra, 13 August 2008, p. 2.

10.2.1.2 OSS licensing conditions

As described in the basic criteria for OSS above, and in contrast to proprietary software, there are no restrictions on the use of OSS for any purpose within an organisation. As OSS licences are royalty and fee-free, it does not matter how many instances of a given open source program operate within an organisation. Organisations or persons are also free to make whatever use they like of the software, either to modify it or put it to new uses, without the software's copyright holder having any capacity to restrict how the software is used. In this way, the use of OSS within an organisation may reduce risk of non-compliance with licensing conditions compared to proprietary software.[471]

OSS licensing conditions come into effect only at the point where the software is redistributed, or where the software is modified and made available to third parties. Licence conditions typically require the redistributors to supply source code along with the programs, and prohibit royalties or fees to be attached to copies of the software. While these conditions comprise restrictions on the use of OSS, it is worth noting that any kind of redistribution or modification is usually prohibited under proprietary software.

Commercial enterprise built around OSS cannot then obtain revenue through the orthodox method of charging per-copy or per-instance of software provided to the customer. Redistributors are permitted to charge a distribution fee for providing OSS – for example, a fee may be charged to permit a customer from downloading OSS from a website, provided both the program and the source code are made available on the same terms.[472] As the software and source code is open source, however, the customer is then free to make copies and redistribute as she or he sees fit, which over time will likely compromise the sustainability of this business model, as future customers will no longer obtain copies from the fee-charging distributor.

In practice, commercial enterprise around OSS has developed with a particular emphasis on service delivery. That is, the software and source code is made available to the customers at no cost, and revenue is obtained through providing maintenance and other services to the customer through ordinary service contracts. International enterprise level Linux distributors are increasingly adopting this business model, with IBM, Red Hat, Novell (Suse), and Mandriva among others providing services for Linux and other OSS. However, because the source code of all OSS is available for general use, there are less barriers preventing new businesses from providing services. Commentators on OSS suggest that one advantage to consumers is that a wider range of businesses are able

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[471] Australian Government Information Management Office, *A guide to open source software for Australian Government agencies*, Australian Government Department of Finance and Administration, Canberra, 2005; Paul Russell, IBM Linux Technology Centre, *Transcript of evidence*, Canberra, 13 August 2008, p. 2.

[472] Free Software Foundation, 'Frequently Asked Questions about the GNU Licenses', viewed 15 April 2009, <http://www.fsf.org>.

to compete to provide services for maintenance of OSS, which may improve service delivery and reduce costs to customers over time.[473]

10.2.2 Cost of OSS and proprietary software

As described above, there are two key differences in the types of costs likely to be incurred by users of OSS and proprietary software respectively. The first is that proprietary software usually has a per-unit cost, whereas licensing conditions attached to OSS mean that the per-unit cost is typically either marginal or zero. The second is that owners of proprietary software have the potential to control access to updates, and to control access to, or the ability to make, modifications to software. In some cases the proprietor may only provide this service for a fee.

The costs of software can also extend beyond use of the software itself to the data produced by use of software. If data is held in proprietary formats, there may be a significant 'lock-in' cost to customers who contemplate adopting alternative software. That is, data may become inaccessible to a customer if they do not have the right software to access it. Costs may be incurred if the customer attempts to convert the data into a different format, or if the owner of the proprietary software does not provide a means for the data to be converted, it may be effectively 'lost' upon adopting new software. It is in response to this possibility that a number of jurisdictions internationally have endorsed the use of open standard formats for data and information (see Chapter Eight and below).

The Committee was told about another aspect of vendor lock-in by Mr Paul Russell, who noted that under the proprietary software model there was potential for consumers to be disadvantaged should the proprietor alter the functionality of the product:

> The exposure of vendor lock-in in proprietary software is very real, although you might say that this company is unlikely to vanish — and there are not actually many Australian owned companies that you could point out and make that claim of in the ICT industry. Even the big ones vanish. But also there are the end of life products, or they decide they are going to change the way the next version works, and that one feature that you relied on in your critical infrastructure is gone. There is no negotiation; it is over, and you have to scramble and find something. Unfortunately you hit these issues. In an open source product you could then make the choice. If you really want that, are you prepared to take on the maintenance burden? You have more options.[474]

Ultimately the cost to government from using proprietary software or OSS will be determined by the licensing and contractual conditions entered into with the software or service provider. Consequently, and as noted above, neither kind of software is inherently more expensive or cheaper than

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[473] Australian Government Information Management Office, *A guide to open source software for Australian Government agencies*, Australian Government Department of Finance and Administration, Canberra, 2005; Australian Service for Knowledge of Open Source Software, *Submission*, no. 73, 5 September 2008; Red Hat Asia Pacific, *Submission*, no. 50, 22 August 2008; Paul Russell, IBM Linux Technology Centre, *Transcript of evidence*, Canberra, 13 August 2008.

[474] Paul Russell, IBM Linux Technology Centre, *Transcript of evidence*, Canberra, 13 August 2008, p. 9.

another. Furthermore, government must take a range of other factors into consideration when selecting software, including (for example) whether:

- it is fit-for-purpose;
- it meets security requirements; and
- the workforce is capable of using it with or without training.

10.2.2.1 Total Cost of Ownership

In its submission to the Inquiry, Red Hat Asia Pacific presented evidence of the relative costs of OSS and proprietary software in terms of "Total Cost of Ownership" (TCO) – that is, the cost associated with purchasing and maintaining software in an enterprise over time. This evidence, produced by the Robert Frances Group in 2002 indicates that, at least in some circumstances, costs associated with the use of OSS for web server applications can be less than those associated with proprietary software.[475] The study found that "although some initial costs were higher at points, the ability to massively scale the product horizontally without paying additional licensing fees can yield significant cost savings over the long term."[476]

In 2002, Microsoft Corporation commissioned a study of TCO for Linux versus Windows Server 2000, finding that over a period of five years Windows had a better TCO than Linux in print, network infrastructure and security infrastructure. Linux had a more favourable TCO than Windows in web serving.[477]

In 2004, Open Source Victoria updated a 2002 study by Cybersource that also compared cost of ownership of Linux and Windows. The study modelled total costs associated with implementing Linux and Windows respectively in an organisation with 250 computer-using staff, including workstations, servers, internet connectivity, IT staff salaries, and so on.[478] This study claimed that TCO for a "standard" Linux solution (that is, a Linux implementation without a pre-paid support contract) was 36 per cent less than a Windows solution when existing hardware and infrastructure is used, and 26 per cent less when new hardware and infrastructure is purchased.[479] By comparison, the TCO for an "enterprise" Linux solution (that is, with pre-pard support) was 27 per cent less than Windows using existing hardware, and 19 per cent less with new hardware.[480]

However, the Committee notes that many of these TCO findings are contested. In practice, the TCO for specific software will be dependent on

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[475] Robert Frances Group, *Total Cost of Ownership for Linux in the Enterprise*, Westport, Connecticut, 2009.
[476] Robert Frances Group, *Total Cost of Ownership for Linux in the Enterprise*, Westport, Connecticut, 2009, p. 2.
[477] Jean Bozman, et al., *Windows 2000 Versus Linux in Enterprise Computing: An assessment of business value for selected workloads*, IDC, sponsored by Microsoft Corporation, 2002.
[478] Cybersource and Open Source Victoria, *Linux vs Windows: Total Cost of Ownership comparison*, Cybersource, Melbourne, 2004.
[479] Cybersource and Open Source Victoria, *Linux vs Windows: Total Cost of Ownership comparison*, Cybersource, Melbourne, 2004, p. 5.
[480] Cybersource and Open Source Victoria, *Linux vs Windows: Total Cost of Ownership comparison*, Cybersource, Melbourne, 2004, p. 6.

the individual requirements of the host organisation. However, the Committee believes there is sufficient evidence of competitive TCO from OSS to consider using it in government operations.

Finding 23: There is sufficient evidence of cost-competitiveness between open source software and proprietary software for government to carefully consider both options during software procurement and development.

10.2.3 Security

IT security is a critical concern for IT administrators and for government. There are a number of aspects to security that should be considered in a software environment which may influence choices for supply and servicing arrangements. Through the course of this Inquiry, the Committee became aware that there is concern in some sectors of the public sector that OSS is inherently less secure than proprietary software.[481]

A large part of this concern arises from the observation that the (largely) voluntary communities of OSS developers have less incentive to perform software maintenance than proprietary software developers, because the remuneration of proprietary software developers is related to proficiency and timeliness in responding to bug reports and security issues. There is evidence, however, that weakness in response to security issues is not an inherent quality of OSS.

As is the case for software under both licences, the capacity of developers to respond to issues with the software is directly related to how many people are actively engaged in the development process. Major operating systems, such as Mac OS X, Microsoft Windows and Linux typically have a very rapid response when bugs or security flaws are discovered, due mostly to the large number of software developers associated with those projects. The Committee received evidence from Mr Max McLaren, Managing Director of Red Hat Asia Pacific that for Linux, bug and security fixes can be comparable to those for proprietary software:

> …we have research which shows that something like 95 per cent of all of our bugs are addressed with 24 hours and 100 per cent within 48 hours in the Linux code that we distribute, which is well faster than any proprietary software vendor.[482]

On the other hand, small scale software developers, either proprietary or open source, have far less capacity to respond to bugs or other issues with their software.

10.2.3.2 Application transparency

Another area of contention regarding software security of proprietary and OSS respectively focuses on the advantages and disadvantages of making source code available for scrutiny. Both approaches have advantages and disadvantages.

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[481] VicRoads, *Submission*, no. 58, 28 August 2008, p. 9.
[482] Max McLaren, Managing Director, Red Hat Asia-Pacific, *Transcript of evidence*, Melbourne, 27 November 2008, pp. 2-3.

For example, because the source code for proprietary software is unavailable for public scrutiny, it is sometimes argued that the software is less vulnerable to exploitation as the public cannot easily identify flaws in the code. This means that the proprietor of the software has a responsibility to monitor and maintain the security of its code in-house. On the other hand, there should be few problems for consumers of proprietary software identifying the author of specific functions within the product, and seeking advice on advanced features, or advice on how to use it in unusual ways.

For OSS it is sometimes argued that the public release of the source code provides more opportunities for people to examine and identify weaknesses in the code, and then exploit those weaknesses. Alternatively, proponents of OSS argue that the public release of source code also provides more opportunities for the developer community to fix any problems. In contrast with proprietary software, however, the fact that OSS development is often conducted by a voluntary and dispersed community may mean that identifying authors of specific product functions, or seeking advice on unorthodox implementation of the software, is more difficult.

Another, less obvious, concern with security was raised with the Committee in some submissions. Red Hat Asia Pacific suggested that because government does not typically have access to the source code of the proprietary software that it uses, it is unable to audit it to ensure that the software does not compromise its systems or data. When government uses OSS on the other hand, it has the potential to examine the source code of the software to ensure that it does not compromise security of government data or system access.[483]

Red Hat Asia Pacific also suggested that the ability to modify OSS could provide opportunities to improve system security by removing redundant features of the software:

> As a matter of basic policy, government agencies should refuse to use any software, proprietary or nominally open source, in security critical applications unless they are given an opportunity to audit the source code for flaws. Open source allows such auditability as a matter of course, and with no added transaction costs. Also, the modifiability of open source has benefits in high security deployments, because removal of unwanted features reduces security exposure.[484]

Obviously, the ability of government to audit or modify source code would be dependent on its in-house capacity for software analysis, or on its willingness to contract outside expertise for this purpose. In practice, there may be little desire for undertaking modification of products by government.

The Committee notes that in response to these kinds of concerns some proprietary software companies do make source code available to government for scrutiny. Microsoft has introduced its Government Security

[483] Red Hat Asia Pacific, *Submission*, no. 50, 22 August 2008, p. 9.
[484] Red Hat Asia Pacific, *Submission*, no. 50, 22 August 2008, p. 9.

Program, for example, that provides limited viewing access to source code.[485]

10.2.3.3 Government procurement of OSS to ensure transparency

Some commentators have argued in favour of OSS for government applications because it would be consistent with the preference for transparency in democratic governance:

> …core software infrastructure in a vibrant democracy must be able to be scrutinised, reviewed and made accountable by any citizen through access to the source code. At present, free software provides that opportunity. What is more, free software allows citizens to better participate in and improve upon the process of democracy.[486]

In the previous Parliament, the Scrutiny of Acts and Regulations Committee recommended that OSS be used by the Victorian Electoral Commission for collating election results for similar reasons.[487] The Committee recognises that there may be circumstances in which OSS will be more appropriate than proprietary software as far as government transparency is concerned. However, the Committee is not of a view that this provides an overriding rationale for the universal adoption of OSS in government applications.

The Committee is of the view that the principle of open access to software is different to open access to information. Software generally provides a tool through which government purposes are achieved, whereas information directly affects how government decisions are formed. While it may be relevant for the public to be able to scrutinise the algorithm used in a software program to allocate votes in a general election, it is not so obvious that the public needs to view the source code of the word processor used by a public servant – provided the program produces the text the author intends, the mechanism by which this is achieved is irrelevant. While government has a responsibility to ensure the security of the software it uses, it is far from clear that the best way to achieve this is through exclusive procurement of OSS – particularly if the OSS in question has a small or non-existent developer community, as may often be the case for government-commissioned software.

Finding 24: The principle of government transparency to public scrutiny may provide grounds for the procurement of open source software (OSS) in some situations. However, transparency alone does not provide grounds for a universal policy of OSS procurement by government.

10.2.4 Government release of software as OSS

Open source and open content have closely related principal purposes – that is, they provide a means through existing copyright and IP law for disclosure, sharing and redistribution of protected material. The success of

[485] Microsoft Corporation, 'Microsoft Government Security Program', viewed 16 April 2009, <http://www.microsoft.com>.
[486] Brian Fitzgerald and Anne Fitzgerald, *Submission*, no. 38, 25 August 2008, p. 7.
[487] Scrutiny of Acts and Regulations Committee, *Inquiry into electronic democracy*, Parliament of Victoria, Melbourne, 2005.

the OSS movement – particularly in regard of projects such as Apache[488] and Linux that now occupy important spaces in the ICT industry – has provided a useful analogy when arguing for the potential benefits of open content licensing, as has the emergence of new business models for obtaining commercial return from OSS.

As noted above, some proponents of OSS argue that the licence attached to this kind of software is most appropriate for government use, both for procurement and as the default licence for government-owned software. This is because, as is also argued for open content licensing:

- government and the public should be able to examine software that performs government functions on behalf of the public; and
- the public should not be compelled to pay for software produced by government in pursuit of its core business.

As noted in section 10.4.3.2 below, current Victorian Government policy is to allocate IP rights in software produced for it to the software developer, with certain restrictions to ensure the Government's interests are protected. This means that there is nothing to restrict people who develop software for the government from subsequently releasing it as OSS.

The Committee also notes that in the UK there has been a recent policy shift toward accommodating the release of government software under open source licences. This can occur where a definite plan for commercial development of a given piece of software cannot be demonstrated.[489] The Committee suggests that the Victorian Government monitor the effect of this policy on the development and investigate whether it could be usefully applied in Victoria in future.

10.3 Issues affecting software procurement

The Committee recognises that the Victorian Government's ICT procurement policy does not express a preference for proprietary software or OSS. Specifically, the policy states that:

> The Victorian Government's objective is to carry out procurement of ICT goods and services in a way that:
>
> - Delivers value for money;
> - Maintains the highest standards of probity;
> - Is competitively neutral;
> - Manages risk.; and
> - Is consistent across government.[490]
>
> As one of Victoria's largest purchasers of ICT goods and ICT services, the Victorian Government recognises the need for its procurement practices to

[488] Apache is an OSS Webserver.
[489] UK Minister for Digital Engagement, *Open Source, Open Standards and Re-Use: Government action plan*, UK Government, London, 2009.
[490] Office of the Chief Information Officer, 'ICT Procurement', viewed 28 May 2009, <http://www.dtf.vic.gov.au>.

> encourage greater innovation, reduce costs to businesses and redress any unfair advantage to particular sections of the market.

The Committee notes that there are no policy barriers to the use of OSS by the Victorian Government, and that in fact a large number of ICT services to Government are currently facilitated by OSS. The Victorian Government website – www.vic.gov.au – for example, is almost exclusively run on open source products. Furthermore, the Victorian Government has provided support to the open source industry in Victoria by means of a grant to establish the Open Source Victoria cluster (www.osv.org.au).

During the course of the Inquiry, the Committee was nevertheless told that there may be other barriers to wider uptake of OSS within government that do not necessarily reflect Victorian Government policy or any particular weakness in OSS as a product, but are rather the result of structural or perceptual imbalances in government ICT procurement practices.[491] Representatives from open source and proprietary software sectors expressed their preference that both types of products be subject to a 'level playing field' for government procurement, so that the software and associated costs could in each case be evaluated on its merits.

The Committee agrees with this position, and notes that an optimal outcome for government will occur if agencies are provided with sufficient expertise and tools to thoroughly evaluate the relative merits of OSS and proprietary software. However, in all cases the Committee believes that certain key criteria should be applied to the acquisition of all software by government into the future. In part these arise from the Committee's recommendations concerning the use of open standards for government data described in Chapter Eight of this report.

10.3.1 Open standard format-capable software

One of the key risks to government in the acquisition and use of all software is that the information and data produced by the public sector using that software could become locked up in proprietary formats, which may over time become inaccessible without appropriate licensing, or redundant through obsolescence. This was one of the key reasons for the Committee recommending that from now on, wherever possible, the Victorian Government store its information and data in open standard formats.

Risks associated with reliance on proprietary file formats and standards is now well-recognised in the ICT industry. Interoperability and accessibility are increasingly recognised as key factors during software procurement. As noted in Chapter Eight, this development is now recognised by some major proprietary software companies, and has led to the public release of some file formats and standards that were previously unavailable for public scrutiny.

The Committee also notes that the implementation of open standards in software is not the same as open source licensing. The capacity of a software product, whether proprietary or open source, to save files in open standard formats is independent of its licensing model.

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[491] Red Hat Asia Pacific, *Submission*, no. 50, 22 August 2008.

The Committee believes that all software procured by the Victorian Government from now on should be capable of saving files in open standard formats, and that the software should, wherever possible, be configured in order that file saving should default to open standard formats. This position compliments the Committee's earlier recommendation that the Victorian Government endeavour to use open standard formats for saving and storing its documents and data (see Recommendation 21).

Recommendation 42: That the Victorian Government require, as part of its whole-of-government ICT Procurement Policy, that software procured by the Government be capable of saving files in open standard formats, and that wherever possible, the software be configured to save in open standard formats by default.

10.3.2 Understanding products and business models

The Committee received evidence that one of the barriers to the adoption of OSS by government is that in some sectors there is poor understanding of OSS and the business models that may support it. There are currently some excellent resources to inform public servants about the costs and benefits of OSS. There are also opportunities for government to proactively obtain better quality information about the potential costs and benefits of OSS in its own operations.

10.3.2.1 General knowledge of OSS

During the Inquiry the Committee heard that a key barrier to further adoption of OSS in government was imperfect understanding by some public servants of the development process of OSS, and the business models attached to that software.[492] The Committee also heard that there was a "cultural" reluctance toward the adoption of OSS, particularly from sectors of government that were accustomed to traditional proprietorial arrangements for software provision, management and service.[493] A number of these concerns are discussed above – namely, the concern that as OSS is not "owned" by anyone, no one will have sufficient incentive to fix it; the concern that the public availability of source code makes OSS more vulnerable to attack; and concern that OSS is more expensive to implement and maintain in an organisation.

The Committee notes that none of these concerns are inherent weaknesses of OSS. Through careful analysis at the point of procurement, a government department should be able to make an informed decision about the capacity of the development community attached to a specific piece of OSS to sustain further maintenance of the product. This process should be undertaken using comparable procedures to those currently engaged by a government department assessing the capacity of a proprietary software company to maintain and service its product.

The Committee was told on a number of occasions during this Inquiry that one of the most useful sources of guidance on the procurement of OSS for

[492] Cyberspace Law and Policy Centre, *Submission*, no. 68, 5 September 2008; Red Hat Asia Pacific, *Submission*, no. 50, 22 August 2008.
[493] Patrick Callioni, Division Manager/First Assistant Secretary, Australian Government Information Management Office (AGIMO), *Transcript of evidence*, Canberra, 13 August 2008, p. 3.

government is published by AGIMO. *A Guide to Open Source Software* is a comprehensive document that is cited within Australia and internationally. The Committee recommends that, as part of its ICT procurement strategy, relevant persons in government departments be directed to this document, or that the themes within it be incorporated into guidance for Victorian Government ICT procurement.

Recommendation 43: That the Victorian Government ensure when preparing guidance for procurement, ICT personnel should be equally aware of the strengths and weaknesses of both OSS and proprietary software.

10.3.2.2 Licence conditions and proliferation

While there are a group of software licences commonly referred to as 'open source' licences, it is important to note that a number of licences with a range of attached conditions fall under this category. Given that there are a number of different OSS licences, any government agency looking at using OSS should ensure that the licence conditions are carefully analysed, so that any attached conditions are not breached through use of the OSS in specific circumstances.

The Committee notes that analysis of licences would also be required of proprietary software as matter of course, and that in general there is more variation in conditions attached to proprietary licences. In practice, the legal analysis of licence conditions attached to OSS is likely to be no more onerous than that associated with proprietary licences.

10.3.2.3 OSS for front end applications

While the Committee notes that use of OSS in back-end applications is becoming more commonplace, proprietary software is more commonly installed on workstations, laptops and desktops. Given the development of open source desktop and workstation software in recent years, particularly with regard to variants of the Linux operating system, the Committee believes the Victorian Government should examine potential roles for OSS in a working environment. In doing so, the Victorian Government may have an opportunity to systematically compare the utility and cost of OSS in a controlled environment, and feed the resulting information into its future software procurement considerations. Given the polarisation of findings from existing studies into the TCO of proprietary software and OSS, an in-house evaluation of the relative cost of OSS by the Victorian Government may be useful as a case study for business units throughout Government.

The Committee notes reports that the Department of Justice has implemented OSS on its workstations, and recommends that the Victorian Government use, or gather, cost and other data from the Department to evaluate the utility of OSS products in this context.

Recommendation 44: That the Victorian Government fully evaluate the Victorian Department of Justice open source software (OSS) workstation trial to assess the potential for wider use of OSS in Victorian public service workstations.

10.3.3 Victorian Government software IP policy

The Victorian Government policy for IP in software is specified in the document *ICT Procurement – Intellectual Property in Software*.[494] Under this policy the default position of the Victorian Government is that whenever procurement by the Government involves the creation of software, "the contractor owns the developed software (as well as associated documentation and associated tools) subject to a notification requirement and a licence back to the Victorian Government."[495] Should the contractor take possession of IP in the project, the licence provided by the contractor back to the Victorian Government entitles the Victorian Government to do "everything with the developed software, associated documentation and associated tools except commercially exploit them."[496] This default position can only be varied with approval from the secretary of the relevant Victorian Government department, and only in exceptional circumstances.[497]

Prior to introduction of this software IP policy, the Victorian Government retained IP in software developed for it. While the Victorian Government could potentially commercialise or further develop software it owned, this rarely occurred, and software was also rarely disseminated for other purposes. By allowing software contractors to obtain IP over the software they developed on behalf of Government, the Victorian Government intended to stimulate and support the Victorian ICT industry.

The Victorian Government's software IP policy has assisted Victorian software companies to commercialise software. For example, HSD Development was contracted by the Department of Education and Early Childhood Development to develop a facilities management system for the Victorian state school system. The resulting software has since been deployed in other Australian jurisdictions, "including industry sectors, such as emergency services, universities and local councils, where the reliable and accurate auditing of extensive building infrastructure can improve efficiency and reduce costs."[498]

The Committee is of the view that this policy provides an effective mechanism to encourage development of proprietary software businesses through government software procurement. By granting commercial IP rights to the software developer, the Government obtains its objectives while providing Victorian-based software companies with potentially marketable assets.

However, there is potential in the Committee's view that this policy could provide proprietary software developers with an advantage when seeking contracts for software development with the Victorian Government.

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[494] Government Services Group, 'ICT Procurement – Intellectual Property in Software', viewed 17 April 2009, <http://www.dtf.vic.gov.au>.
[495] Government Services Group, 'ICT Procurement – Intellectual Property in Software', viewed 17 April 2009, <http://www.dtf.vic.gov.au>, p. 1.
[496] Government Services Group, 'ICT Procurement – Intellectual Property in Software', viewed 17 April 2009, <http://www.dtf.vic.gov.au>, p. 1.
[497] Government Services Group, 'ICT Procurement – Intellectual Property in Software', viewed 17 April 2009, <http://www.dtf.vic.gov.au>, p. 1.
[498] Hammond Street Developments, *Media release: Facilities management system for school buildings wins leading ICT award*, Nunawading, 9 April 2009.

Proprietary software developers may be able to reduce the cost of tenders in anticipation of financial returns from the IP they obtain in the software. Due to the different business models employed, OSS developers would have less capacity to defray costs in this way. The Committee recommends that the Victorian Government examine its IP policy to ensure software procurement tendering remains competitive for proprietary software and OSS developers.

Recommendation 45: That the Victorian Government examine its policy for ICT Procurement to ensure that it continues to assist the Victorian ICT industry.

10.3.4 Providing a neutral competitive environment for OSS and proprietary software procurement

The emergence of commercial models that utilise OSS has led to increased competition in sectors of the ICT industry traditionally dominated by proprietary software solutions. In response, some proprietary software companies have changed their business models to better compete with OSS products. In this environment, organisations that are familiar with both licensing models are best positioned to take advantage of the cost competitive products.

One of the principle concerns of the OSS community regarding government use of OSS products is that the tendering process for obtaining software currently favours proprietary software over OSS. Conversely, proprietary software providers are concerned that government should not support OSS to the exclusion of proprietary products. The general position put to the Committee by service and software providers was that government ensure that its mechanisms and practices for obtaining software be licence neutral – that is, that the process provides for both OSS and proprietary software to be considered on their respective merits and cost-effectiveness.[499] The Committee agrees with this position.

The Committee was told by Mr Chatterjee, Manager of Ozlabs, IBM that in all government ICT procurement, the key consideration should be obtaining desired functionality for least cost. [500] As discussed above, the estimation of cost in this context should account for cost over time, including any potential expense associated with product redundancy or lock-in. A focus on functionality should also mean that government takes care not to prescribe the mechanism by which software solutions are obtained, and therefore provide opportunities for new and innovative solutions to emerge.

The Committee is also aware that the extent to which features of OSS offer cost, security and/or flexibility advantages over proprietary software is very much dependent on the needs of the host organisation, on the characteristics and quality of specific software, and on the size and

[499] Australian Government Information Management Office, *A guide to open source software for Australian Government agencies*, Australian Government Department of Finance and Administration, Canberra, 2005; UK Minister for Digital Engagement, *Open Source, Open Standards and Re-Use: Government action plan*, UK Government, London, 2009.
[500] Abhisek Chatterjee, Manager, OzLabs, IBM, *Transcript of evidence*, Canberra, p. 10.

sophistication of the company or developer community that produces the software. Capital cost, functional fit, technological fit, standards support, and ongoing vendor support are the most important considerations during the procurement of software. Consequently, it is important to ensure that the software licensing model – open source or proprietary – does not influence software procurement decisions, except insofar as the licence directly affects the total cost of using the software.

10.3.3.1 Requests for tenders

One way in which agencies may introduce unintentional barriers for particular business or licensing models is through the introduction of unnecessarily prescriptive requirements in requests for tenders. These may include, for example, tenders requests that specify the use of proprietary products, formats, standards or business models. As noted by Microsoft Corporation in its submission to the Inquiry:

> Governments should not mandate or extend preferences to specific business models or licensing models, or specify particular means of achieving interoperability to the exclusion of others. Such actions may:
>
> (a) chill innovation and competition;
>
> (b) impede customers from deploying the best technical solutions available (which can include deploying proprietary software and OSS solutions side-by-side);
>
> (c) restrain local economic growth; and
>
> (d) ignore the other critical facets of interoperability (including people interoperability) that must be in place to accomplish the widespread adoption of interoperable technologies.[501]

Government requests for tenders should be carefully phrased to focus on the required functionality of the desired ICT solution, rather than specify the products government anticipates will be required for that solution.

The Committee was also told by Red Hat Asia Pacific that current Victorian Government procurement tenders favoured the delivery of proprietary software bids over OSS bids:

> Many of the Terms and Conditions, guarantees, Insurances are repeated from one tender to another – all requiring substantial time and effort to answer. Many of these Terms and Conditions are not conducive to Open Source software requiring substantial legal involvement and risking exclusion from the tender process, for potentially failing Mandatory requirements. Partial tenders and alternate tenders are typically viewed less favorably and often will not be accepted. A tenderer ultimately has to make the decision whether they bid for a tender or not and failure to do so may lock them out of business with an Agency for a substantial period of time.[502]

Given the potential of OSS to contribute to the Victorian Government's ICT environment, equal opportunities should be provided for OSS developers and proprietary software developments to bid for government tenders.

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[501] Microsoft, *Submission*, no. 46, 22 August 2008, p. 4.
[502] Red Hat Asia Pacific, *Submission*, no. 50, 22 August 2008, p. 14. *[sic]*

Commercial models of both software types should be accommodated in the terms and conditions for government software requests for tenders. Consequently, the Committee recommends that the Victorian Government examine its tender process and documentation to ensure that neither OSS nor proprietary software developers are disadvantaged in the procurement process.

Recommendation 46: That the Victorian Government ensure where appropriate that tenders are neither licence specific nor have proprietary software-specific requirements; and meet the given objectives of Government.

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Appendix One: List of Submissions

Adult Multicultural Education Services

Australian Bureau of Statistics

Australian Publishers Association

Australian Service for Knowledge of Open Source Software

Australian Spatial Information Business Association

Banyule City Council

Baw Baw Shire Council

Boroondara City Council

Bureau of Meteorology

Centre for Adult Education

Chinese Medicine Registration Board of Victoria

Chiropractors Registration Board of Victoria

City of Greater Dandenong

City of Greater Geelong

City of Melbourne

Council of Australian University Librarians (CAUL)

County Court, Victoria

Creative Contingencies

CSIRO

Cyberspace Law and Policy Centre

Ms Carole Czermak

Deakin University

Disability Services Commissioner

Fisheries Co-Management Council

Google Australia

Health Services Commissioner

Intellectual Property Research Institute of Australia, University of Melbourne

IP Australia

Mr John Kennedy

Latrobe City Council

La Trobe University

Legal Services Board

Magistrates' Court of Victoria

Mandriva Australia

Metropolitan Fire & Emergency Services Board

Microsoft

Monash University

Mornington Peninsula Shire

Moyne Shire Council

National Health and Medical Research Council

Office of Knowledge Capital

Office of Spatial Data Management

Ombudsman Victoria

Open Source Geospatial Foundation Australia-New Zealand Chapter

Open Source Industry Australia Limited

Pharmacy Board of Victoria

PILCH Victoria

Privacy Victoria

QUT Law Faculty

Red Hat Asia Pacific

Residential Tenancies Bond Authority

RP Data Limited

Scientific Writing & Consulting

Sentencing Advisory Council

Shire of Campaspe

Southern Cross Station Authority

Mr Benjamin Spry

State Services Authority

Strathbogie Shire Council

Sustainability Victoria

The Cancer Council Victoria

Transformation Systems

Transport Accident Commission

University of Melbourne

Vic Roads

Victoria Grants Commission

Victorian Auditor-General's Office

Victorian Catchment Management Council

Victorian Competition and Efficiency Commission

Victorian Council for Civil Liberties

Victorian Council of Social Service

Victorian Disability Advisory Council

Victorian Government

Victorian Spatial Council

Victorian WorkCover Authority

Vision Australia

Waugh Partners

Wellington Shire Council

White SW Computer Law

Wikimedia Australia

Appendix Two: List of Witnesses

Public hearings

Brisbane 12 August 2008

Professor Tom Cochrane	Deputy Vice-Chancellor, Technology, Information and Learning Support
Professor Brian Fitzgerald	Professor of Law **Queensland University of Technology**
Professor Anne Fitzgerald	Professor of Law **Queensland University of Technology**
Dr Peter Crossman	Assistant Under Treasurer and Government Statistician of Queensland
Mr Tim Barker	Assistant Government Statistician Office of Economic and Statistical Research
Mr Neale Hooper	Principal Project Manager Office of Economic and Statistical Research **Queensland Treasury**
Ms Kimberlee Weatherall	Senior Lecturer, TC Beirne School of Law **University of Queensland**

Canberra 13 August 2008

Mr Abhisek Chatterjee	Manager **OzLabs**
Mr Paul Russell	Computer Programmer **IBM Linux Technology Centre**
Mr Patrick Callioni	Division Manager, Australian Government Information Management Office (AGIMO) **Department of Finance and Deregulation**

Mr David Hocking	CEO
Mr Graeme Martin	Victorian Chapter **Australian Spatial Information Business Association (ASIBA)**
Professor Richard Jefferson	CEO **CAMBIA**
Mr Ben Searle	General Manager, Office of Spatial Data Management **Geoscience Australia**

Melbourne 8 September 2008

Ms Linda O'Brien	Vice Principal Information & CIO **The University of Melbourne**
Dr Louise Minty	Assistant Director, Water Analysis and Reporting, Water Division **Bureau of Meteorology**
Mr Carl Obst	Regional Director, Victoria **Australian Bureau of Statistics**

Melbourne 30 September 2008

Mr Simon Edwards	Manager, Government and Industry Affairs **Microsoft**
Mr Michael Pearce SC	Vice-President **Liberty Victoria**
Ms Carolyn Dalton	Head of Public Policy and Government Affairs
Mr Alan Noble	Engineering Site Director **Google Australia and New Zealand**

Mr John Wilbanks	Vice-President, Science
	Creative Commons
Dr Terry Cutler	Principal
	Cutler & Company

Melbourne 27 October 2008

Mr Alan Smart	Principal Consultant and Marketing Director
	ACIL Tasman
Professor John Rosenberg	Deputy Vice-Chancellor, Academic
Ms Anne Horn	University Librarian
	Deakin University
Mr Olaf Hedberg, AM	Independent Chair
	Victorian Spatial Council
Associate Prof Abbas Rajabifard	Director, Centre for Spatial Data Infrastructures and Land Administration, Department of Geomatics
	The University of Melbourne

Melbourne 27 November 2008

Mr Max McLaren	Managing Director
Mr Paul Took	Account Executive
	Red Hat Asia Pacific
Mr David Groenewegen	Deputy Director
	Australian National Data Service
Ms Yvonne Thompson	Manager, Strategic Data Development
	Emergency Services Telecommunications Authority

Appendix Three: Extract from Legislative Assembly Votes and Proceedings.

No 58, Wednesday 27 February 2008, pages 282-283.

PARLIAMENTARY COMMITTEE REFERENCES — Motion made and question proposed — That under s 33 of the *Parliamentary Committees Act 2003* the following matters be referred to the joint investigatory committees specified:

(1) To the **Economic Development and Infrastructure Committee** — for inquiry, consideration and report no later than 30 June 2009 on the potential application of open source licensing to Victorian Government information and, in particular, the Committee is asked to:

(a) report on the potential economic benefits and costs to Victoria of maximising access to and use of Government information for commercial and/or non-commercial purposes, including consideration of:

(i) public policy developments elsewhere in Australia and internationally; and

(ii) the types of information that will provide the greatest potential benefit;

(b) consider whether use of open source licensing models, including Creative Commons, would enhance the discovery, access and use of Government information;

(c) report on the use of information and communication technology to support discovery, access and use of Government information; and

(d) identify likely risks, impediments and restrictions to open source licensing of Government information, including impacts on and implications for any existing cost recovery arrangements.

Appendix Four: OECD Recommendation of the Council for enhanced access and more effective use of public sector information[503]

While commercial and non-commercial access to, and re-use of, public sector information and content is generally becoming more open, obstacles sometimes impede efficient and effective use, such as restrictive or unclear rules governing access and conditions of re-use; unclear and inconsistent pricing of information if re-use is chargeable; complex and lengthy licensing procedures; inefficient distribution to final users; and barriers to development of international markets. The role of public sector organisations as collectors, producers and disseminators of public sector information is not always clear, particularly in competitive areas.

Specific policy recommendations include:

- Maximising the availability of public sector information for use and re-use based upon the presumption of openness as the default rule.

- Encouraging broad non-discriminatory competitive access and conditions for re-use of public sector information by eliminating exclusive arrangements, and removing unnecessary restrictions on the ways in which it can be accessed, used, re-used, combined or shared.

- Improving access to information and content in electronic form and over the internet.

- Finding new ways to digitise existing public sector information and content, to develop “born-digital” public sector information products and data, and to implement cultural digitisation projects where market mechanisms do not foster effective digitisation.

- When public sector information is not provided free of charge, costs charged should not exceed marginal costs of maintenance and distribution. Any higher pricing should be based on clearly expressed policy grounds.

- Exercising copyright in ways that facilitate re-use, and where copyright holders are in agreement, developing simple mechanisms to encourage wider access and use, and encouraging institutions and government agencies that fund works from outside sources to find ways to make these works widely accessible to the public.

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[503] Organisation for Economic Co-operation and Development, 'Shaping policies for the future of the internet economy', viewed 25 June 2008, <http://www.oecd.org>.

Appendix Five: Venturous Australia report – Chapter Seven recommendations

Recommendation 7.1

The Australian Government should experiment with the use of prizes to stimulate innovation. Funding should be modest – say $5 million over two years with an external evaluation after three years.

Recommendation 7.2

Patent law should be reviewed to ensure the inventive steps required to qualify for patents are considerable, and that the resulting patents are well defined, so as to minimise litigation and maximise the scope for subsequent innovators.

Recommendation 7.3

Professional practitioners and beneficiaries of the IP system should be closely involved in IP policy making. However, IP policy is economic policy. It should make the same transition as competition policy did in the 1980s and 90s to being managed as such.

Recommendation 7.4

Firms asserting or defending intellectual property should have a right to opt out of 'appellate double jeopardy'.

Recommendation 7.5

Explore the potential of facilitating the emergence of auditable standards to encourage better comparative voluntary reporting of the quality of firm performance. Areas where substantial gains seem likely include:

- the quality of workplaces as proposed at the 2020 Summit;
- the quality of clinical units in hospitals that wish to participate; and
- the performance of educational institutions at all levels in raising students' academic scores.

Recommendation 7.6

Facilitate favourable conditions for the development and use of new and emerging technologies by establishing appropriately funded enabling technologies strategies that:

- adapt or build regulatory frameworks to support the responsible and safe use of innovative services and products;

- support the science and metrology required to underpin effective regulation and capitalise on opportunities;

- foster public awareness and community engagement; and

- collect data and develop metrics to support evidence based policy development, monitoring and evaluation.

Recommendation 7.7

Australia should establish a National Information Strategy to optimise the flow of information in the Australian economy. The fundamental aim of a National Information Strategy should be to:

- utilise the principles of targeted transparency and the development of auditable standards to maximise the flow of information in private markets about product quality; and

- maximise the flow of government generated information, research, and content for the benefit of users (including private sectors resellers of information).

Recommendation 7.8

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

Recommendation 7.9

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

Recommendation 7.10

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

Recommendation 7.11

Action should be taken to establish an agreed framework for the designation, funding models, and access frameworks for key collections in recognition of the national and international significance of many State and Territory collections (similar to the frameworks and accords developed around Australia's Major Performing Arts Companies).

Recommendation 7.12

Funding agencies should consider eligibility for cultural and collecting agencies in gaining access to contestable research funding programs.

Recommendation 7.13

The role of institutions such as the Australian Institute of Aboriginal and Torres Strait Islander Studies (AIATSIS) should be broadened and strengthened in recognition of the special importance of preserving indigenous collections and the unique value of indigenous traditional knowledge and practices within Australia's innovation system.

Recommendation 7.14

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

Recommendation 7.15

In a similar spirit the Australian Government should initiate a process whereby countries come together to fund prizes for innovations of international significance with a particular focus on the needs of the developing world.

Appendix Six: The AGLS Metadata Standard[504]

AGLS element	Definition	AS 5044 obligation	Australian Government obligation
Creator	The agency, business unit, or individual primarily responsible for the resource.	Mandatory	
Date	A date associated with an event in the life of the resource.	Mandatory	
Description	A textual description of the content and/or purpose of the resource.	Mandatory	
Title	A name given to the resource.	Mandatory	
Type	The category or genre, and aggregation level of the resource.	Mandatory	
Function	The business function to which the resource relates.		Mandatory for collection-level resources Mandatory for service description Mandatory (if no Subject element)
Subject	The topic or content of the resource.		Mandatory (if no Function element)
Availability	How the resource can be obtained or accessed, or contact information.		Mandatory for offline resources
Identifier	An unambiguous reference to the resource within a given context.		Mandatory for online resources
Publisher	The entity responsible for making the resource available.		Mandatory except for service descriptions
Audience	The target audience of the resource.		Mandatory when target audience is restricted
Coverage	The extent or scope of the content of the resource.		Mandatory when spatial coverage of the resource content is not the whole of Australia
Language	The language of the intellectual content of the resources.		Mandatory when the resource is in a language other than English
Contributor	An entity responsible for making important but		

[504] Australian Government Implementation Manual; AGLS Victoria

	secondary contributions to the content of the resource.		
Format	The physical or digital manifestation of the resource.		
Mandate	A specific legal instrument which requires a resource to be created or made available.		
Relation	A reference to a related resource.		
Rights	Information about rights held in and over the resource.		
Source	Information about a resource from which the current resource is derived.		