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Digital Economy Future Directions Consultation Paper

Australian Spatial Information Business Association Response

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Introduction

The Australian Spatial Information Business Association (ASIBA) is the peak body representing the spatial information industry's private sector. The Association was formed in response to the recommendations of the Spatial Information Industry Action Agenda, which was completed in 2001.

ASIBA represents the spatial information industry's interests on issues specific to spatial businesses. Its members are significant producers, managers and users of spatial data infrastructure. They provide data collection and value-added services to government, industry and the community. However, the industry and its productive relationship with the Australian community is facing some serious constraints to developing and using spatial data infrastructure. These constraints should be addressed, urgently. This review provides such an opportunity.

What does success look like?

Success within the spatial information industry is not limited to the traditional professional domains usually associated with the sector. Much of today's spatial innovation comes from companies engaged in on-line services, marketing, business systems integration, location-based services and social networking, amongst others. Companies such as Google have brought spatial information to the masses. This innovation alone has spawned many new uses of spatial data for mapping and other location services and products. In more recent times this phenomenon has extended to mobile technologies such as in-car GPS navigation devices and cellular phones.

The emergence of 'social networking' has contributed to new products and services such as Loopt, which is a person-to-person mobile social networking package sweeping the USA. These new ideas and concepts are consumer driven, with business responding to demand through innovative products supported by innovative income mechanisms.

Current statistical research tends to report basic access information such as broadband installation and the number of internet subscribers. These narrow statistics only tell us that people have the technology, not what they are using the technology for. The purpose for which the technology is acquired will help us to better appreciate the infrastructure needs for the future.

Business transactions are not always financial transactions; therefore, business may be 'transacting' over the internet much more readily than the current statistics reveal. Location-based services are a business transaction, as is fleet management. The payment for services may or may not be via the internet. While broadband speed would undoubtedly enhance such services, there are other technologies that must also be 'improved' to enhance business uptake. For example, where location is

concerned, the problems with GPS reliability are important considerations but this is not a broadband issue.

Fixed and mobile technologies must be analysed separately so that we can see more clearly where the consumer perceives that government and industry investment in broadband has greater value.

Markers for Success

1. Emergence of new products and services in the mobile and fixed line domains;
2. Uptake of new services requiring both mobile and fixed line capacity;
3. Maximum use of spatial information for policy, management and operational decision making;
4. Investment in new or improvements to existing supporting technologies (such as GPS);
5. Data reliability;
6. Cost savings from shared data;
7. Optimized and standardized data and services.

Maximization of Potential

1. Innovative products or solutions developed in Australia;
2. New products and service offerings;
3. International adoption of Australian technologies and products/services (export);
4. Value of investment in Australian products and services.

Open Access to Public Sector Information

Open access to Public Sector Information (PSI) has been one of ASIBA's goals since it was formed in 2001. This focus arose out of the Spatial Information Industry Action Agenda, which recommended open access to PSI and for such information to be provided at the 'marginal cost of transfer'. As early as 2001, it was recognised that access and pricing of PSI represented an opportunity to advance Australia's spatial capacity. A Productivity Commission Report in 2001 supported ASIBA's position on PSI access and pricing.

However, open access to PSI must include a commitment by all governments to **fully fund** the collection and updating costs of its data needs. After all, accurate, timely and easily accessible data is fundamental to developing evidence-based public policy and to the service delivery responsibilities of government.

The suggestion that *a no-charge policy for spatial data provided by government departments and agencies could result in deterioration in data quality* is quite wrong. It suggests that governments could not collect high quality data for statutory purposes without relying on commercial purchases of that data. If data is deemed necessary for government purposes, then it is the duty of agencies to ensure that data is fit for purpose to ensure quality outcomes.

'In the US, open and unrestricted access to public sector information has resulted in the rapid growth of information intensive industries particularly in the geographic information and environmental services sectors. Similar growth has not occurred in Europe due to restrictive government information practices'.¹

A report by the Productivity Commission² in 2001 noted that agencies are increasingly turning to cost recovery to fund their activities and products. It also noted that where new agencies are created that they have a presumption in favour of cost recovery. The Report estimated that cost recovery revenues were in excess of \$3 billion in 1999-2000 and that it had grown by 24% in real terms since 1995-1996.

The Productivity Commission Report stated that 'cost recovery arrangements generally lack the attributes of good policy'. Perhaps more disturbing is the conclusions that most cost recovery arrangements 'are ad hoc and lack transparency'. It goes on to say that 'the processes demonstrate poor accountability and review mechanisms'.

ACIL Tasman estimated that the impact on the contribution to GDP of inefficient access to data was to reduce the contribution made by spatial information industry by around 7 per cent. The impacts will

¹ US Department of Commerce, *Borders in Cyberspace: Conflicting Public Sector Information Policies and their Economic Impacts*, 2002

² Productivity Commission, *Cost Recovery by Government Agencies*, August 2001

be particularly strong in property and business services, government services, transport, electricity and water and communications.³

What categories of Public Sector Information (PSI) are most useful to industry and other stakeholders to enable innovation and promote the digital economy?

Collecting spatial information is part and parcel of almost every data *collection*. It has been estimated that as much as 80% or more of data collected has a spatial reference. Therefore, almost all government fundamental data has value to other agencies, the public and business.

This information includes data such as health, crime, education, property sale records, amongst many other collections. Spatial Information Management (SIM) has moved from a specialist application to a technology relevant to a wide spectrum of information technology and communications ecosystems.

In 2005, international market analysis by IDC⁴ forecast a market characterized by the following:

- Increasing emphasis on enterprise issues such as data quality, security, and process-based integration in both government and commercial sectors;
- Increasing emphasis on geospatial master data within enterprise systems (organizations worldwide will maximize and exploit their spatial data and technology across their enterprises and external organizations);
- Increasing geospatial capabilities from large Internet providers like Google, Yahoo, MSN and AOL – vendors that will continue to freely expose their geospatial functionality to the broader developer community;
- Sharply increasing effects of location-determining technologies such as Global Positioning Systems (GPS), radio frequency identification (RFID), wireless LAN (WLAN), intelligent networked sensors and cellular networks – technologies that are rapidly becoming ubiquitous;
- Increasing systems and data integration opportunities focused on spatially-enabled enterprise information systems.

The analysis above has proved correct. Indeed, it has arguably underestimated the growth of new adjunct technologies and concepts such as the Locata technology and relatively new concepts such as social networking, which will increase demand for spatial data.

What are priority issues that will facilitate the use of PSI?

It is crucial that the Australian Government identify a single **national agency/unit within an appropriate portfolio** that has the authority to develop policy for the spatial information sector to benefit government, the community and business. This unit would act as the secretariat for the

³ ASIBA. *Spatially Enabling Australia*, 2007

⁴ IDC International, *Market Analysis – Worldwide Spatial Information Management 2005-2009*, (2005)

proposed **national advisory committee**, similar to the Federal Geographic Data Committee in the USA (see below).

Access and pricing have been the key issues since the publication of the Spatial Information Industry Action Agenda Report, *Positioning for Growth*, in 2001. However, IDC (refer above) believes that a significant challenge for the future will be **data quality, currency and security**, which it says ‘will become a significant constraining factor’ on growth.

In his speech at NatStato8, David Gruen⁵ argued that government can ‘improve its evidence base by making better use of the data collected by agencies’. He added that ‘a useful evidence base depends heavily on clear and consistent data definitions. Inconsistent data are a big problem, particularly with figures collected across different jurisdictions. Every year since 1996, the Productivity Commission has released the Review of Government Services (RoGs) report that compares the performance of government services across states. And every year since 1996, readers of the RoGs report are overwhelmed by footnotes explaining the differences in data definitions across jurisdictions’.

Given how the use of spatial information and technologies has grown, governments must resolve the long-standing need for a **Spatial Data Infrastructure** (SDI). The United Nations has accepted that an SDI is an infrastructure and, in 2007, sought to develop and implement a UNSDI⁶ to support ‘humanitarian response, economic development, environmental protection and peace and safety’.

The current economic circumstances make coordinating and managing a whole-of-government PSI an important financial challenge. Cost savings will be a significant feature of nationally coordinating spatial data within government, much of which will come from shared data, which will reduce duplication and redundancy.

One important action government can take to ensure wide application and use of spatial data is to establish a national advisory committee, similar to the Federal Geographic Data Committee in the USA.

‘The FGDC is a 19 member interagency committee composed of representatives from the Executive Office of the President, and Cabinet level and independent Federal agencies. The Secretary of the Department of the Interior chairs the FGDC, with the Deputy Director for Management, Office of Management and Budget (OMB) as Vice-Chair. Numerous stakeholder organizations participate in FGDC activities representing the interests of state and local government, **industry, and professional organizations**.⁷ At present, in Australia, there is no private sector or professional

⁵ David Gruen, Executive Director, Macroeconomic Group, The Treasury, *speech to NatStats08 Conference*, 20 November 2008

⁶ United Nations Geospatial Information Working Group, *Strategy for developing and implementing a United Nations Spatial Data Infrastructure*, 2007

⁷ The Federal Geographic Data Committee, *Organisational structure and purpose*, www.fgdc.gov

representation on any national coordination committee, yet some agencies are claiming a strong reliance on private sector data acquisition to fund data collection and maintenance.

If PSI is made open access, what are the best formats to enable and promote use and reuse?

Open standards that promote optimum interoperability are essential. A multimillion dollar applied research project, Spatial Interoperability Demonstration Project, conducted under the AusIndustry Innovation Access Program provides ample evidence of the value of open standards to emergency management⁸. This project was recognised world-wide as a leading innovation and demonstration of the value of spatial interoperability.

The development of standards for spatial information is the focus of the Open Geospatial Consortium (OGC)⁹ and Australia is a strong contributor to this international body.

If PSI is made open access, what licensing terms would best facilitate and promote its use and reuse?

Digital rights management (DRM) is an area of pressing interest, as the internet has become the primary means of access and the distribution for digital data of all sorts, including spatial information.

In the spatial information area the Open Geospatial Consortium (OGC) is one of a number of organisations developing digital rights management architectures for spatial information. An important development that is gaining widespread support is the development of a Government Information Licensing Framework (GILF).

The GILF offers the prospect of a legal environment of standardised terms and conditions within which all government information transactions would occur. One avenue of facilitating information sharing across jurisdictions that is being developed is the Creative Commons licensing regime. Creative Commons defines a spectrum of licensing possibilities between full copyright — all rights reserved — and the public domain — no rights reserved. This regime potentially provides another legally effective information licensing framework to facilitate the sharing of information.

The Queensland Government has developed such a Creative Commons licence template for potential adoption across Australia. This may provide direction for a national approach. There is a need for national leadership to develop a fully national licensing framework to achieve a seamless national economy as envisioned by COAG (COAG, 2 October 2008).

⁸ Australian Spatial Information Business Association, Open Geospatial Consortium (funded by AusIndustry), *Spatial Interoperability Demonstration Project*, 2005

⁹ Open Geospatial Consortium, www.opengeospatial.org

Should licensing terms distinguish between commercial uses and non-commercial uses and reuses?

The private sector should be encouraged to build value-added products with PSI. Should delivering these value-added services place an additional load on the PSI infrastructure, then the private sector should be expected to contribute, in some appropriate way, to the delivery. This is a balanced approach; and licensing is a valid mechanism as long as it does not inhibit free market initiatives.

An example of policy failure is public toilet data, which is collected to support the National Contingence Management Strategy (with the assistance of over 1,200 Councils, State government agencies, transport providers, shopping centres, service stations and food outlets across the country). This data is now only available through a single central searchable website (<http://www.toiletmap.gov.au/>) and is covered by Crown copyright – all (known) attempts to obtain copies and value add to this data set are being frustrated by the department concerned.

Are there other examples of innovative, online uses of PSI?

There are a lot of new ideas in the pipeline at the moment that will involve using spatial data in a variety of ways. We will find an increasing demand for real-time data both within government and in the commercial sector. We will also see an increase in integration of technologies with spatial information and this will produce a range of new products and services such as mobile person-to-person social networking (see www.loopt.com).

Is there any additional economic modeling or other evidence to show the benefit to Australia from open access of PSI?

The USA's proposal for a Geospatial Line of Business, which has the backing of the Office of Management and Budget and the Federal Geographic Data Committee (FGDC), will promote the coordinated development, use, sharing and dissemination of spatial data through better leveraging of critical tools that will advance the National Spatial Data Infrastructure.

Some examples of modeling include:

Productivity Commission, *Cost Recovery by Government Agencies*, August 2001

JN Danziger and KV Andersen, *International Journal of Public Administration, The Impacts of Information Technology on Public Administration: An Analysis of Empirical Research from the "Golden Age"*, 2002

Peter Weiss, U. S. Department of Commerce, National Oceanic and Atmospheric Administration, *National Weather Service Borders in Cyberspace: Conflicting Public Sector Information Policies and their Economic Impacts*, 2002

Conclusion

While the Australian Government has adopted a policy of open access and low cost in relation to PSI, the fact remains that state agencies still favour cost recovery as a principle. The 2001 Report by the Productivity Commission is clear that ‘many aspects of cost recovery arrangements are inconsistent with sound economic principles’, noting that cost recovery policies have ‘the potential to distort the allocation of resources in the economy and, ultimately, to reduce living standards’. It further notes that current arrangements often create ‘perverse financial incentives that are incompatible with overarching government objectives’, which ‘reduce competition and innovation and encourage regulatory creep and cost padding by agencies’.

However, arguably the most significant failing of government in relation to spatial information has been in the lack of a single national policy agency to take carriage of important policy needs: as demand and innovation within the sector grows, government must be confident that policy meets its objectives without undue interference in the innovation process. The myriad policies and systems within local and state governments, which impose significant costs on both government and industry, only aggravate the problems. Establishing a single policy coordinating body, such as that referred to previously, could significantly improve service delivery within government while reducing costs.

The Productivity Commission¹⁰ stated that, in all cases, ‘cost recovery should not be implemented where:

- it is not cost effective;
- it would be inconsistent with policy objectives; or
- it would unduly stifle competition and industry innovation (for example, through ‘free rider’ effects).’

Further worrying evidence arising out of the Productivity Commission Review includes the revelation that ‘little information on cost recovery is published by regulatory and information agencies directly, or through budget documents and that cost recovered revenues often are not distinguished from other revenues’. It went on the state that ‘proper scrutiny of cost recovery requires that better information be available to users and the Government on an ongoing basis’.

The concept of regulatory creep and cost padding was raised in a number of submissions to the Productivity Commission Review. Regulatory creep occurs when cost recovery revenues are earmarked to the agency and when the agency is a monopolist (as is the case for most regulatory agencies and some information agencies). Further, cost recovery may also encourage agencies to pay less attention to non-cost recoverable activities.

¹⁰ Productivity Commission, *Cost Recovery by Government Agencies*, August 2001

In its Report the Commission noted that ‘in some cases, cost recovery charges may act as barriers to the market entry of new firms or products. This may occur because the lack of property rights over regulated products creates ‘free rider’ problems’.

‘Even where the absence of property rights is not an inhibiting factor, the level of cost recovery may prevent or discourage firms’ entry into markets. Cost recovery also has the potential to impede the entry of new, more technologically advanced products into the market’.

More challenging views have been put by Dr Nicholas Gruen¹¹, who was recently appointed by the Minister for Finance to advise the Australian Government on deregulation. In a speech to the Asia Pacific Spatial Innovation Conference in November 2008, Dr Gruen said that ‘Australia is behind many other advanced countries in establishing institutional frameworks to maximise the flow of government generated information and content’. He added that ‘it requires the building of institutions – including ‘challenge agencies’ – to tackle inertia and buck-passing and to construct hybrid public/private institutions to finesse innovation in the mixed economy’.

In support of this perspective, the Executive Director of the Macroeconomic Group in Treasury, David Gruen¹², said at the 2008 NatStats08 Conference that ‘having clearly defined administrative data is all very well but it’s next to useless if these data are not shared with those best able to build the evidence base. Our universities and research institutes are teeming with people wanting to draw lessons from agencies’ statistics. In many cases it’s these researchers who have the time and expertise to build the evidence base. But in many cases these same researchers don’t have access to the data. Researchers are often forced to fumble around like the drunk that searches for his keys under a street light – not because his keys are likely to be there, but because it’s the only spot where he can see’.

It is arguably the case that more innovation has occurred since Google made data available ‘free’ over the Internet. There is a strong lesson for government in this approach.

¹¹ Dr Nicholas Gruen, CEO Lateral Economics, *speech to Asia Pacific Spatial Innovation Conference*, 18 November 2008

¹² David Gruen, Executive Director, Macroeconomic Group, The Treasury, *speech to NatStats08 Conference*, 20 November 2008