Digital Economy Industry Work Group
Response to Consultation Paper
Digital Economy Future Directions

for

The Department of Broadband, Communications and the Digital Economy

11th February 2009

The following paper directly addresses the questions put forward by the Department. The paper is compiled from a collection of responses received from members of the Digital Economy Industry Work Group (DEIWG). The DEIWG Community consists of approximately 150 companies and 200 representative members. DEIWG delegations have recently had productive meetings with Minister Conroy and Deputy Prime Minster Gillard, and are currently seeking to engage other Ministers in useful Digital Economy discussions. The purpose of DEIWG is to bring issues associated with the Digital Economy to the fore and generate interest and awareness for the Digital Economy. The DEIWG Community has representatives from Health, Education, Telecommunications and Media that collectively form a hub of expertise for building productivity and a strong, modern economy.

DEIWG Point of View

The DEIWG community commends the Government's strategy paper addressing the future directions of the Digital Economy. Like the government, DEIWG sees an urgent need to maximise online participation and increase e-business income from its current 3% share of national income growth. DEIWG recognises that broadband take-up is now heading towards saturation, but user spending on-line is relatively insignificant in terms of national conventional spending. Part of the problem has been that although the dial-up era is all but over (having been replaced by broadband) new connections do not yet have sufficient capacity (speed) to allow media-rich and fluent e-Transacting. A second issue is that the current business and consumer population is not yet sufficiently digital media literate to take best advantage of the digital economy revolution.

The National Broadband Network promises to resolve the first of these issues and DEIWG is a strong and fervent advocate for this important government initiative. In this advocacy DEIWG seeks, and has achieved, meaningful dialogue with various Ministers to inform them of the pent-up service provider demand, for open access to a high capacity national network. DEIWG believes that the NBN is fundamental to Australian businesses contributing to the global Digital Economy. DEIWG also believes that a higher capacity network, delivered to a maximum of Australian users, has positive effects on the environment in the sense that it enables more telecommuting, more video-conferencing, and thereby provides a consequent reduction in the national carbon footprint.

The departmental paper articulates the need for a focus on e-Business strategies that promote the growth of on-line trading within the retail sector, which currently makes only a small contribution to Australia's Digital Economy. This is a consequence of the current lack of digital media literacy in business and consumer circles, but is also a manifestation of the need for a unified telecommunications platform. Domestic consumers need to be presented with a single connection to a multiplicity of services, all conforming to a unified and electronically secured connection platform. Proper and regulated management of the NBN promises to resolve this issue.

A unified national platform will allow a trans-sectoral utilisation of national infrastructure. Education, health, emergency services, power and electricity utilities can all use the same infrastructure to deliver information services to businesses and consumers. For example, technologies such as geo-spatial referencing can be deployed across each of these sectors with diverse and beneficial outcomes. Similarly, geo-spatially referenced Public Sector Information presented to business and consumers will better inform the decision making process and lead to higher national productivity. DEIWG endorses the paper's view on the management and facility of PSI and reinforces the notion that a unified national telecommunications platform will deliver these outcomes. DEIWG's key message here is that a trans-sectoral approach is necessary to achieve greatest utility out of any new national infrastructure.

DEIWG identifies a need for Government leadership on directions for the Digital Economy. Time and education will mean that next generation of business and consumers will be willing participants in the Digital Economy. It is the current generation of business and consumers that need to be encouraged to participate. Public availability of standardised PSI, education about online security, and programs increasing digital and media literacy, are all measures that Government can take now to accelerate participation rates. In addition to these measures Government must provide a regulatory framework that allows all businesses, community service providers, and consumers to access the national platform in a secure and equitable environment.

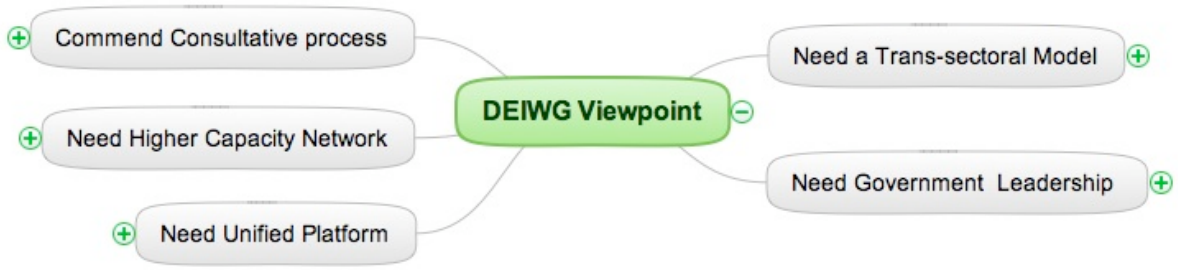

Figure 1. The DEIWG Viewpoint illustrated.

DEIWG Responses to Consultation Paper

Introduction

What markers of success can government, industry and other stakeholders establish?

The markers of success for a growing and internationally recognised digital economy will be realised when all Australians have affordable access to services such as e-health, tele-education, energy and environmental applications. This should be promulgated through leading examples from governments departments (Health, Education, Energy, Climate change etc) utilising the NBN to deliver their applications to all Australians.

Government must look at the nature of just what the Digital economy is and how it is delivered, (or could be delivered) and supported in the strategic national interest. There needs to be a broader explanation; the NBN is the core digital network, but projects like Smart Grid, Digital TV switch over and a National e-health system are part of what the US ITIF calls the digital infrastructure. In Australia, our digital infrastructure is all of the above, and should also include a National Emergency Services System. All of these projects are big-ticket items and all of these projects deliver a Digital Dividend. They are all in the strategic national interest and need to be collectively managed and rolled out as one trans-sectoral umbrella managed exercise.

One of the markers of success may be the metropolitan and regional broadband penetration, as a percentage of respective populations over a fixed period of time. Further milestones could be evolved to track progress.

A system of continuous feedback should also be implemented, to keep Key Performance Indicators (KPI) in focus, while striving to improve all elements of the nation's digital infrastructure. KPI's could be set for the NBN platform, Smart Grid deployment, tele-education, e-health (# remote surgical procedures etc), and National Emergency Services (SES, Fire brigade, National Weather Bureau etc.)

How will we know when we have maximised the potential of Australia's participation in the digital economy?

Australia's participation in the digital economy will be maximised when we are utilising our full capacity for research and development with the innovative direction and visionary management that has become part of our national identity.

This must be initiated by developing the knowledge and skill base of the masses in the use of these core elements as part of Digital Economy package. That is, there must be widely available access and the skills to realise its full potential.

This can only happen when communities, industry sectors, service organisations and governments are freely and widely able to obtain funds (self funded or government funded) for initiatives on the basis that they have clear value propositions for developing an aspect of the digital economy. Such initiatives will have measured objectives for adding value; will be appropriate for collaboration, and will be supported by flexible policy and legislation. When this situation is realised it will be evidence of real socio-economic gains.

Consultation topics

1.Open Access to Public Sector Information

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

To enable innovation and promote the digital economy there should be freely available National and International (public) Research data as well as published national and international education and health journals. This encourages participation in, and contribution to, the digital economy from students and academics alike, whilst building the knowledge and skills base at a tertiary level.

There may also be access networking for National Geo-spatial data e.g. Climate data (Solar/wind/rain/ocean) and Soil data to indentify who is doing what and where. Utilising the digital economy and the NBN as a collaborative tool for sharing and stockpiling scientific data is a significant outcome.

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

Facilitating the use of the PSI assists to address the following priority issues.

- A Digital Dividend (say, Analogue spectrum recovery) that expands the accessibility of all to the Digital network via wireless Broadband innovation
- National Emergency Services communications network
- Deployment of Smart grids
- Expansion of e-learning
- Migration to e-government
- Establishment of a national e-health system incorporating home care/help, remote care/help, intelligent triage on line, patient remote sensing and management,
- Proliferation of mobile virtual training (skills maintenance) facilities.

In order for this to be realised there must be an independent end-to-end infrastructure access regime. This makes the NBN a top priority.

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

Regardless of what format is used it must allow distributed simulation, distributed computing and virtual collaboration.

Open access implies open, non-proprietary formats, such as those recommended by the Open Document Format (ODF) Organisation and the International Digital Publishing Forum.

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

The Internet is generally unlicensed. This non-licensed regime has proven successful in allowing innovation and collaboration to excel without being bound by legal difficulties.

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

There may be some data that needs to be on a registered basis due to Intellectual Privacy and other privacy issues.

2.Digital confidence

What more can industry and other stakeholders do to address concerns about consumer privacy and online safety?

The evidence is now overwhelming that the PC, in both workstation, home user and server form, is unsuitable for safe and secure usage for transactions using the Internet without substantial hardware and software modification. The main threat to trust and confidence in the "digital economy" now lies with the "node points" in the network, and not within the network itself. The concern now, as evidenced by numerous reports and studies here, and overseas, is that the main risk involves "data security".

This has been agreed by the ICT product and systems industry itself through such projects and admissions as the Microsoft Inc "Palladium / NGSCB" project. The situation is similar to that of some 25 years ago, as Australia entered the EFTPOS or Electronic Funds Transfer at Point-of-Sale business on a national basis. The cash register was deemed unsuitable for safe transactions on an end-to-end basis. The so-called "PINPad" was developed and integrated, with associated "back-end" security systems, such as "Security Control Modules" (SCM), to provide the acknowledged success of EFTPOS in Australia. Users are now familiar with the usage of and trust these devices for everyday transactions at merchants and banks Australia wide.

Industry has the technology and ability to offer exactly the same structure to the ordinary home, SME or any other user wishing to perform transaction from a PC based end-point and appropriate industry standards exist (For example the SA 2805 series of EFTPOS security standards). It should be noted that the earlier referenced Microsoft Inc project did exactly that, it placed an effective PINPad in each PC for safe and secure usage in Internet carried transactions. It must also be noted that this project did not come into commercial offering or usage.

It is the responsibility of government, as in most other cases of safety and security, e.g. the motor vehicle industry, to mandate the provision of these units to users of the digital economy and to work with industry who will, in turn, develop and propagate the appropriate standards. There are two levels of industry implied in this section:

- The manufacturers, suppliers, importers of actual ICT products and systems, e.g. computers, data switches, packaged and software.

- The enterprises who use ICT products and systems to provide an information service to end-users, e.g. the banking and finance industry, Federal/State/Local government, retail and wholesale sectors.

The Federal Government, allied with the United States, could initiate this by planning a program of gradual and mandatory introduction of such devices across Australia in much the same way as "set top boxes" must be distributed for the transition to digital TV to occur.

What more can be done to increase trust and confidence in online transactions?

To increase online confidence there must be further support for local, sector specific trusted networks. The Government may also build a register of online fraud statistics in proportion to legitimate transactions.

Government must take up a balanced and public view of the security obligations of business and government enterprises as well as the end-user. This is normal in nearly all other industries in Australia, from pharmaceuticals to transport. There now appears little that the normal end-

user can do to guarantee that their PC is safe to use on the Internet, nor do they have the capability to even make such a decision or statement. Government mandating of this capability will build confidence.

What is needed to address the SME concerns identified above?

Government must lead the way in the adoption of trusted platforms for the delivery of its transactions oriented and allied services. In turn, government must ensure that it's CIO's and ICT professionals and management have the demonstrated skill base needed to determine the safety and security level of the server systems and applications they deploy. This can be achieved either by in house development or by outsourcing contracts. Specifically, particular care must be taken in any move to acknowledged insecure "web services" style of operation.

Are there possible barriers preventing a strong online retail experience in Australia? What can industry and other stakeholders do to address these?

There is a lack of true mobility in the current national networks design. End users globally are mobile, so the data must be accessible anywhere if we are to truly have a next generation IP network. This is what a National Broadband Network is all about. It is impossible for end-users and SME's to maintain the required security levels in their systems (e.g. software patches, anti-virus/Trojan updates, etc) on dial-up connections but this will become extremely urgent in 2009-2010 and appropriate arrangements will be an imperative for fringe city, regional and remote users.

What is the experience of business-to-business e-commerce in Australian supply chains? Are companies, large and small, saving money because they are now making electronic transactions? What are the barriers to take-up? Are international companies benefiting from ecommerce transactions with consumers and with other businesses?

At present it can cost a significant amount of time and effort to do electronic business. Notionally, wherever the National broadcaster goes with RADIO we must also go with data. That's why the Digital Dividend (the recovered analogue MHz TV spectrum) is of strategic national importance. Review the US FCC decisions on the Digital Dividend and follow suit; but utilise Australia's research and development and innovation capability to do it better.

Some barriers are; the Web site that crashes; the voice activate telephone enquiry line that "does not understand"; the internet link from your mobile phone that becomes un-usable; and, the rural tourist business that cannot get connected. It is a reasonable and realistic hypothesis that a regional tourist association could provide seamless information, product supply and bookings via Internet, SMS, and mobile devices to all its visitors across a unified, secure platform such as the NBN.

Business-to-business e-commerce is more or less impossible at dial-up speeds, and satellite services are not much better. They are up to 5 or 6 times the price, (even given the "DBCDE broadband guarantee") compared to ADSL and other services. Consultancy company experience here supports this where companies have had to make use of slow, batch-oriented file transfer techniques. The NBN has the potential to resolve this issue.

A further barrier is that many audio server sites require tones to activate appropriate services - this is not easy in a VOIP or digital communications environment. This issue will have to be resolved.

What evidence shows the possible barriers preventing greater online content offerings? What can be done to address these?

In order to receive greater online content we need open networks. Vertical integrated models are making it difficult for independent organisations to compete with the vertical integrated companies. These integrated companies often buy up content and rights, simply to sit on it preventing others from using it .For example, the incumbent carriers and the commercial broadcasters.

By redeploying Digital Spectrum Dividends and combining with innovation and R&D, we can eliminate the complaints to the regulators, regarding cell phone networks running out of steam with no signal or sufficient capacity to accommodate the users. This is Australia's opportunity. The Government needs to ramp up the R&D, report the findings and implement as soon as possible.

3.Developing Australia's knowledge and skills base

What can industry and other stakeholders do to assist the Governments existing efforts to develop the digital and media literacy skills of Australians?

The Federal Government can clearly outline what it is doing to support this statement. This is particularly true at the tertiary/university level in ICT education. It is now acknowledged that:

- ICT degrees in Australia, as well as in the UK and USA, have been extensively "dumbed down" to try and attract students,

- The ICT research base is largely depleted of Australians. Australia will soon lack the ability to even assess the value, quality, safety and security of ICT products it imports.

- The "seed corn" of lecturers, senior lecturers, fellows, and so on, of ICT education and training, particularly at the University level, has been allowed to rapidly deplete over the last 5 years and this is not quickly or easily repaired.

- The Federal Government can change its funding model for universities in the ICT / SET (Science, Engineering and Technology) to move away from economic rationalism which links funding to enrolled student numbers. It could move to funding and planning aligned with the development of appropriate teachers and researchers. Industry could, accordingly, commit to 'product and system specific' training support.

- Industry could also subsidise re-training for non-literate staff and promote internal incentives for further education and training. Industry could also adopt and promote eMedia in training and induction programs and promote paperless transaction methodologies. This must be run at a community level, meaningful initiatives that use supporting electronic technologies. This could be health, or it could be local supermarket on-line ordering. However it must be done in such a way that the right mix of interaction types is achieved. (For example Personal first and then follow up with digital support). Most importantly these programs must be integrated in a way that is both useful and meaningful to the average persons life. Achieving the necessary participation and attendance to such programs means they must be useful and avoid the abstract.

Would specific offline measures to inform business and local industry groups about online offerings assist in developing e-business?

Offline informative measures (seminars, marketing etc) are of limited use. Mandatory digital interface for Government is of more use, to insist a compulsory use and understanding of e-business.

How can industry assist in promoting the attractiveness of ICT related degrees?

Australia needs a series of Education Training Research & Development Facilities (ETRD's) around the country. ETRD's would be/should be run by industry, supported by Governments and utilised by secondary school Yr10's & Yr12's and institutes of tertiary education (Universities/TAFE colleges). This would be an industry led collaborative arrangement where a series of lab and training facilities are provided in various technology, science and engineering streams to suit regional environments. Mentoring, expertise and knowledge transference by industry and business experts, is undertaken along side the academic requirements. This will close the skills gaps and provide real work experience.

This could be furthered by scholarships and incentives for school leavers as well as academics.

What core set of digital economy skills can be incorporated into non ICT-related degrees?

There is no one core set, it depends on the sector. Medical schools if properly funded and encouraged with specific funding programs will soon figure out what ICT skills their doctor graduates may need. However the problem will be that on leaving medical school, ICT savvy doctors will become frustrated with the slow progress of e-health.

At a tertiary level compulsory eMedia units should be a prerequisite to achieve tertiary accreditation, whether that be SC, HSC, Certificates (III, IV) or University degree. Will industry work with Government through the Productivity Places Program and Innovation and Business Skills Australia to improve the curriculum of current training courses?

Yes, but a system such as the ERTD would need to be in place to ensure effective and efficient collaboration between industry and government.

What measures did industry find successful in boosting staff, ICT and e-business skills?

There is a need to encourage outcomes based on approach by sector to ICT and e-business skills.

4.Ensuring Australia's regulatory framework enables the digital economy

Does Australia's copyright law unreasonably inhibit the operation of basic and important Internet services? If so, what are the nature of such problems and practical consequences? How should these be overcome?

The Creative Commons methodology seeks to promote a richer public domain by allowing publishers to pick and choose which rights they waive and which they reserved- dubbed 'some rights reserved' (http://en.wikipedia.org/wiki/Creative_Commons). This would allow for a more free-flowing public access to information and to collaborate trans-sectorally.

There must be a level "playing field" in legislation such that "fair usage" as in the USA is allowed. Is there non-copyright legislation that is directly relevant to digital economy businesses that create uncertainty or barriers? The Telecommunications Act, The Trade Practices Act and other legislation limit the use of funding, or capital, outside specific sectors. This prevents a cross sector approach and creates significant barriers.

Specific work must also be done on the legislation and regulations that need amendment to enable broadband delivery into brownfield and greenfield property developments.

The legal barriers, and monopoly outcry that would occur if Brisbane tried to deliver free to fibre cultural content from the Southbank arts, theatre and music complexes to the suburbs and rural areas of Queensland would be immense. Yet, what better way would there be of breaking down social isolation and stimulating these industries?

5.Digital economy and the environment

What, steps, if any, should Government take to promote the greater adoption of teleworking and videoconferencing? What impact do Operational Health and Safety laws have on the uptake of teleworking and videoconferencing in your industry?

Teleworking has been around for two decades and there are plenty of rules and regulations in place. Currently there is lack of affordable access to networks that allow 'full-blown' teleworking. Existing broadband caps make it unaffordable to use collaborative tools such as video conferencing, graphics, etc.

However, these applications are only a small part of the picture. The role of the digital economy in supporting sustainable development extends into every aspect of industry and social life.

It is time that local governments, industry groups and consumer groupings are encouraged through a national funding program to link economic and social development priorities and programs to the development of digital applications and connectivity. Examples of successful programs elsewhere include the European based TeleCities initiative. Local governments and State Governments are restricted in their ability to construct coherent programs, to use ICT as an economic and environmentally sustaining tool, by the centralisation of responsibilities for communications and ICT policy on Commonwealth / State governments. The NBN process is one such example that has delayed the progression of local initiatives.

If health organisations and rural towns (for example) are provided with funding tied to broad guidelines that require economic development outcomes, improved health care, reductions in CO2 creation, and improved social inclusion, then they are very capable of constructing successful local programs of work. The measurement of the impact of the digital economy impact then becomes possible through analysing the success of these local initiatives.

Teleworking is just one such example, but no sector (e.g. health) or community has made a coherent bid to promote this mode of working, Brisbane is one such example. Tunnels are being built to carry cars between neighbourhoods, but communications initiatives have fallen by the wayside due to lack of State Government support, attributed to the excuse that communications is a Federal responsibility. In the health sector, Brisbanites still carry their records, X-rays from specialist to specialist. Remote consultations are not available. We are still waiting for the Commonwealth e-health agenda to flourish. Yet all of this could have been stimulated at the local level if funding and vision had been allowed to prosper.

6.Measuring the digital economy and its Impacts

What, if any, additional datasets should government collect to improve the benchmarking of Australia's digital economy?

The government can assemble a national register of Internet businesses and a register of access for Service Providers to the NBN. However, we ultimately compete on a global scale and we need to be at least on par with our trading parties and adopt international benchmark goals. These may come from OECD and UE. For example in relation to the all-important infrastructure for the digital economy our benchmark of Broadband at 12Mbps is 2 years old. OECD and EU benchmarks for 2010 - 2015 are 20-50Mbps

What do you consider are the key digital economy indicators?

There are numerous ways to measure this including; the average infrastructure quality needed for the digital infrastructure (measured in Mbps), the number of users that have access to such a quality network, the readiness of government departments (health, education) to deliver nationwide e-applications, measured in quality of application. (E.g. video, graphics, etc; number of applications available to end users and the affordability of it to the average Australian).

The NBN must be Broadband anywhere, whether the user is in a vehicle or walking though a parkland. That is what a true next generation network is all about. This can only be fully achieved by incorporating a long distance high capacity wireless network over recovered wireless spectrum. This is available Digital Dividend. We have the opportunity; the US has determined that this is what will happen in their patch, and we need to do the same, but do it better. Let Australia's innovation, Research and Development capabilities and capacities take on this task; it is globally significant.

This document was prepared by DEIWG members for presentation to the Department of Broadband, Communications and the Digital Economy.

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