



“Smart systems offer the most promising path for Australia to lift its long-term economic growth potential.”

AllA response to the Senate Select Committee on the National Broadband Network

July 2009

The National Broadband Network – implications for consumers and taxpayers

“...it is central to note that the *gains from genuine broadband do not only arise from making it, but using it*...The large and lasting impact of genuine broadband arises from its use...broadband enables deeper engagement in e-commerce, reshaping business and industry supply chains and products.”¹

Background – About AIIA

This submission represents the response of the Australian information and communications (ICT) industry represented by AIIA, to the Terms of Reference from the Senate Select Committee on the National Broadband Network.

The Australian Information Industry Association (AIIA) is Australia’s leading information and communications technology industry body. AIIA's role is to lead and represent the ICT industry in Australia to maximise the potential of the Australian economy and society. AIIA's membership encompasses all sectors of the ICT sector including hardware, software, services and telecommunications. It has almost 500 member companies, from individual consultants, small to medium enterprises to the world's leading multinational corporations. AIIA member companies employ over 100,000 Australians, generate combined annual revenues of more than \$40 billion (approximately 5% of GDP) and export more than \$2 billion in goods and services each year. AIIA's Board of Directors includes the Chief Executives of some of the world's leading global ICT and telecommunications organisations. A copy of AIIA Board members is attached.

AIIA supports the Government’s revised national approach to the NBN along with the associated review of the national telecommunications regulatory environment. The Government’s decision represents a courageous step designed to deliver essential components of a future smart economy. That said, it is critical that this revised approach delivers value for money to consumers; anything less will hamper uptake of the benefits offered by the NBN rollout. Further, commitment to the aggressive timetable set by the Government is essential. Any delay will lessen stakeholder support

¹ “Impact of genuine broadband for Australia” – Centre for International Economics. www.TheCIE.com.au, November 2008, pages 1-2. Italics added.

and compromise much-needed investment – in this regard AIIA has some concerns with the long lead time to completion. Appropriate access cost models that are not subject to any monopoly obstruction by incumbents or are crucial to success; appropriate access models will translate into business uptake and flow-on applications development that should exploit the efficiency potential of the NBN.

Finally, AIIA notes the possible 'digital divide' between consumers receiving the lower service speed of 12mbps as opposed to the larger demographic (90%) coverage receiving fibre-to-the-premises (FTTP) at 100mbps. This aspect will need to be carefully managed through the policy formulation process going forward.

AIIA responds to the Terms of Reference from sub-paragraph (b) below.

Terms of reference

1. That a select committee, to be known as the Select Committee on the National Broadband Network, be established to inquire into and report by 23 November 2009 on:
 - a. The Government's decision to establish a company to build and operate a National Broadband Network (NBN) to:
 - i. connect 90 per cent of all Australian homes, schools and workplaces with optical fibre to the premise (FTTP) to enable broadband services with speeds of 100 megabits per second;
 - ii. connect all other premises in Australia with next generation wireless and satellite technologies to deliver broadband speeds of 12 megabits per second or more;
 - iii. directly support up to 25,000 local jobs every year, on average, over the eight year life of the project.
 - b. The implications of the NBN for consumers and taxpayers in terms of:**
 - i. service availability, choice and costs**

AIIA notes that the lynchpin of the Government's decision is to provide an open access, wholesale network, which, by implication indicates separation between infrastructure and service providers. This is a major step towards better consumer choice and competitive service provision because there will be more retail providers contesting the market and thus offering potentially positive cost savings to consumers, which will in turn 'kick'

uptake along. The delivery of this scenario, however, will depend to a large extent on the regulatory environment; monopoly provision through either an incumbent or another player will facilitate a market structure permitting exercise of market power through vertical integration, and this will lead to a **loss of (mooted) GDP growth of .36% on an investment of \$15billion**. This amounts to an annual loss of \$4billion or 25% of expected benefits from the use of the NBN.² An open, competitive environment is essential to the success of the Government's revised approach; if incumbents or any other market participant are permitted to exercise undue market power so as to deliver returns on equity of anything near 18%, the NBN will be a failure.³

ii. competition in telecommunications and broadband services

There is no dearth of empirical evidence that competition makes a difference, and competition can be encouraged in an open, public/private sector-funded market. This requires some clarification. US research indicates that policies which facilitate competing facilities-based providers to deploy broadband with public/private partnerships or wholly public investment will spur investment – real growth in broadband investment in the last five years has coincided with a series of pro-competitive and pro-investment policy decisions. This suggests that stimulus from the correct public sector policy settings will stimulate private sector follow-on investment, once commitment to appropriate regulatory and legislative platforms are clear to the investment community. In this regard, the protection of consumers from predatory pricing or monopoly behaviour is better served by monitoring and enforcement approaches rather than prescriptive mandates.⁴

A key market structure factor in the success of the NBN rollout will be the extent and nature of competition between wholesale and retail levels NBN supply. The Committee's focus on this issue is to be commended. There are various market structures such as vertical integration separation between wholesale and retail ends of the market, and hybrids in between. It has to be admitted that in Australia, third party competition in industries such as electricity, water and gas has not been perfect, it has brought

² CIE, page 3. Note that CIE models are based in \$15billion investment in the NBN.

³ CIE, page 3

⁴ "The Economic Benefits of Broadband and Information Technology", Patrick S Brogan. Spring 2009, 18 Media, Legal and Policy.

significant economic gains to Australia through lower prices, sustained investment and employment.⁵

i. likely consequences for national productivity, investment, economic growth, cost of living and social capital

The rollout of high speed NBN will enable the more effective implementation of smart technologies in all areas of the economy, and this is the key to the GDP growth potential and national productivity increases of the NBN.⁶ The NBN can kick-start moribund sectors of the economy such as construction, mining and agriculture, health, water and transport. As well as this, it has already provided substantive benefits in other nations to individuals, businesses, and the environment through the ability to deliver a range of commercial, government and information services more efficiently online.

A recent analysis by Access Economics of the economic benefits of intelligent technologies concluded that a high-speed NBN rollout will enable effective implementation of 'smart technologies' in electricity, water, transport and health. These smart systems will allow us to use this data far more effectively, providing the potential to radically alter our economy and society for the better.

Smart Economy outcomes include increased efficiency through:

- removal of redundant or unnecessary human manual processes
- reduced duplication, rework and waste
- immediate presence and reach
- variety and choice of service channels
- information sharing, knowledge exchange and collaboration.

Access Economics *conservatively* estimates that adopting smart technologies in electricity, irrigation, health, transport and broadband communications will:

- quickly grow GDP by 1.5% (within a few years)
- increase the net present value (NPV) of Gross Domestic Product (GDP) of **\$35-80 billion** over the first ten years

⁵ CIE, op. cit., page 3

⁶ Access Economics – Report for IBM, April 2009. All data in this section is drawn from the IBM report.

- create more than **70,000** jobs by 2014

The impact will be larger with our current higher unemployment, as resources will be more readily available to roll out the technology.

In each of the five areas, the benefits *far outweigh the initial capital costs involved*.

Electricity

Australia has reformed its electricity sector over the past two decades. However, future improvements in electricity efficiency will come from deploying smart grids, rather than further changes in industry structure.

Smart grid technologies provide the potential to significantly improve efficiency in the electricity sector through better monitoring and control of the energy network as a supply chain through to end users.

Investing \$3.2 billion in smart grid technology over five years will:

- lower electricity use by 4%
- increase the NPV of GDP by \$7-16 billion over ten years
- create 17,600 jobs

Irrigation

Irrigation accounts for 70% of Australia's freshwater usage, but water efficiency in irrigation is below 50%, with losses evenly split between the distribution system and inefficiencies on farms.

Adopting smart systems through the irrigation areas of the Murray-Darling Basin will:

- reduce water use by 15%
- increase the NPV of GDP by \$420-670 million over ten years
- create 800 jobs (due to the low-labour intensity of agriculture)

If implemented across all Victorian irrigation districts, smarter water could save 400 million cubic metres of water (160,000 Olympic size swimming pools) per year.

Health

The health sector is currently almost 10% of the national economy, a figure set to grow steadily as the population ages and health costs rise. Thus, any improvements in delivering health services will yield substantial gains to the national economy.

Investing \$6.3 billion in an integrated national electronic health records system will:

- increase the NPV of GDP by \$6-13 billion over ten years
- create 12,000 jobs

Smart technologies will also enable telemedicine and remote home health monitoring.

Transport

Intelligent Transport System (ITS) technologies have the potential to address a range of transport issues, in particular helping to: improve safety, efficiency and competitiveness; and reduce environmental impacts.

Adopting ITS technologies will:

- increase the NPV of GDP by \$12-26 billion over ten years
- create 30,000 jobs

Other likely benefits

Access Economics also identified a large number of pervasive improvements whose benefits are hard to quantify.

- Reduced greenhouse emissions
- Better environmental outcomes for Australia's inland river system
- Improved health outcomes for patients
- Improved convenience from smoother traffic flows in cities
- A richer range of commercial, government, educational and information services
- Increased workplace options for business and individuals

A clear precedent

Technological advancement lifted economic performance in the mid-1980s and through the 1990s. Smart technologies offer another significant opportunity to lift Australia's long term growth rate and standards of living.

Smart systems will contribute to efficiencies and increase production throughout the economy – not just in the five areas selected. Even within these five areas, Access Economics admits to having understated the full potential, especially in the longer-term. For example, the estimates in smart electricity benefits do not include the reduced cost of meeting carbon emissions targets. Also, the Australian studies chosen have far more conservative estimates than similar international studies. Regardless, these conservative estimates are large enough to demonstrate that smart systems warrant active policy attention.

2. That the committee's investigation include, but not be limited to:

a. any economic and cost/benefit analysis underpinning the NBN;

Analysis by CIE indicates that simulation models indicate an increase in GDP of 1.4% projected after 5-6 years of NBN use. This data was quoted by the Government in its decision release. In addition the CIE notes that prices should fall by approximately .5%. Whether this data was used by decision makers leading up to the revised announcement is not known by AIIA. But there is a considerable literature supporting the cost/benefits to any economy of the implementation of a high-speed broadband.⁷ AIIA commends the Access Economics report (reference section) to the Committee.

b. the ownership, governance and operating arrangements of the NBN company and any NBN related entities;

Little detail is known about the NBN Co at this stage, and AIIA considers its structure and relationships with key players to be essential to the eventual success of the NBN activity.

- Issues to be clarified include:
- will the NBN Co be an owner or investor in the NBN
- appropriate selection of Board members and senior executive roles will be crucial
- NBN Co will need to quickly establish a rollout plan, fibre inventory, satellite slot, wholesale pricing plans and procurement plans.

Consultation with relevant federal government agencies, existing carriers and services providers must be key to early operational plans for NBN Co if confident investment is to be encouraged; uncertainty in any of the operational or executive arrangements will stifle industry confidence. Of some concern to AIIA is the increasing incidence of network "thickets" currently being established around the country as various state and local governments rush towards the establishment of locally focussed wireless or fibre networks to meet very local needs. Integration and management of this patchwork into the national approach will be a key policy and operational task for NBN Co.

c. any use of bonds to fund the NBN;

AIIA does not have a comment on the use of bonds to fund the NBN, noting only that the Government plans to eventually hand ongoing NBN investment over to the private

⁷ OECD 2008, Broadband and the Economy, Ministerial Background Report Final.

sector after a period of years, and as indicated by the data from Patrick Brogan (see earlier), broadband supports the entire economy so a healthy policy setting for broadband in Australia can be expected to spur healthy investment by the private sector.

d. any regulations or legislation pertaining to the NBN;

AIIA considers that as with any corporate organisation, current corporate, taxation and trade practices regulations and legislation should apply to NBN Co.

e. the availability, price, level of innovation and service characteristics of broadband products presently available, the extent to which those services are delivered by established and emerging providers, and the prospects for future improvements in broadband infrastructure and services (including through private investment);

There is no dearth of information relating to business and private consumer dissatisfaction in Australia with broadband service delivery, pricing and product availability. Not only are regional and rural areas poorly served, even large communities close to major capital cities cannot receive reliable wireless service; many remain on dial-up. This is not a criticism of any particular provider in the current market; rather the policy and regulatory settings of the last decade or so have not facilitated open competition or pricing models that facilitate growth and innovation. The large geographic distances between major population centres in Australia makes it an unwise practice to model Australian broadband development and provision against (say) Asian nations that have frequently mandated near-to 100% broadband provision in highly populous and congested geographies. Nevertheless, currently, Australia is trailing its international peers on a range of telecommunications indicators. The most recent OECD statistics indicate that Australia is:

- in the bottom half of OECD countries in terms of broadband take-up (16th out of 30 countries);
- paying more for broadband than most OECD countries (20th out of 29 countries); and
- 3rd most expensive for fixed line services for small and medium enterprises.

The World Economic Forum has reported that Australia is:

- 25th for accessibility of digital content; and
- 35th for quality of competition in the Internet Service Provider sector.

Against that background context, data from various economic commentators indicate that policy settings which encourage investment in technological innovation lead invariably to further productivity growth. Again, Access Economic analysis makes this point clearly. “Over the second half of the twentieth century, there were three main phases to Australia’s productivity performance:

- strong growth in productivity in the post-war period of reconstruction and expansion to the mid-1970s;
- a marked slowdown in productivity from the late 1970s to the early 1990s; and
- a strong surge in productivity from the early to late 1990s with record highs for both labour and multifactor productivity.

As the Productivity Commission concluded, a substantial factor behind Australia’s slow productivity growth during the 1980s was the presence of structural weaknesses in the Australian economy at the time as a result of policies such as import protection and the centralised wages system. Australia ‘penalised industries with the best growth prospects’, ‘fostered inefficiencies’ and was ‘ill-equipped’ to respond to technological advance, globalisation and overseas competition. The subsequent surge in Australian productivity growth in the 1990s was underpinned by the microeconomic reforms that began in the second half of the 1980s. These reforms laid the path for technological innovation, which further contributed to productivity growth. The acceleration in productivity growth over this period was more substantial in Australia than in other OECD economies resulting in a steady lift in Australians’ living standards relative to others.”⁸

f. the effects of the NBN on the availability, price, choice, level of innovation and service characteristics of broadband products in metropolitan, outer-metropolitan, semi-rural and rural and regional areas and towns;

With commitment to 90% fibre and 10% wireless coverage, the Government’s revised approach to the NBN rollout can only improve upon current availability especially in outer metro, rural and regional areas, as well as service provision. Price, choice and

⁸ Access Economics, op.cit., page 4

innovation will depend to a large extent on uptake, which in turn will be driven by appropriate pricing models.

g. the extent of demand for currently available broadband services, the factors influencing consumer choice for broadband products and the effect on demand if the Government's FTTP proposal proceeds;

Data from both Australian sources and other jurisdictions indicate that uptake of broadband services is exponentially increasing as products improve and services expand. "In 1990 the internet was unknown to most of the US, yet by mid 2008, 55% of all US households subscribed to home internet. As broadband penetration has grown new technologies such as fibre and mobile have taken a growing share of new subscriptions. Prices for basic wireline broadband services have dropped by half since the beginning of the decade. By 2007 consumers could get 10-20 times the speed they could get for the same price ...at the start of the decade...wireless consumers used an average of 769 minutes per month in 2007, up from a mere 140 in 1993."⁹

Given the pent-up demand in the business and consumer communities, the implementation of high-speed almost universal coverage broadband can be expected to boost demand and invite higher investment in the NBN. In the US investment in broadband amounted to \$902 billion in 2007 alone – among the top contributing sectors in the US economy and a primary driver of real, inflation-adjusted growth. Similar outcomes can be expected in the Australian national environment, especially given the early uptake by certain health and financial applications of the efficiency benefits offered by the current broadband network.

h. any technical, economic, commercial, regulatory, social or other barriers that may impede attaining the Government's stated goal for broadband availability and performance in the specified timeframe;

AIIA is not aware of any barriers impeding the delivery of the NBN benefits, assuming an open competitive environment, appropriate regulatory and legislative platforms, flexible pricing access models, suitable ACCC powers that facilitate and do not hamper competition, and ongoing investment by the PPP model to ensure upgrade paths into the future beyond the eight year establishment timeframe.

⁹ Brogan, op.cit., page 78

i. the appropriate public policy goals for communications in Australia and the nature of any necessary regulatory settings to continue to develop competitive market conditions, improved services, lower prices and innovation;

Putting aside the issues of natural monopolies, AIIA considers the most appropriate public policy goals should ensure the following:

- the planning, funding and maintenance of a high-speed, upgradeable, universal digital broadband infrastructure which is the crucial prerequisite to position Australia for long-term economic growth and international competitiveness;
- universal access to high-speed broadband network services must be provided *without technological discrimination or capability differentiation*;
- flexible investment settings and an appropriate regulatory framework are essential to ensure ongoing market-driven and competitive development of broadband infrastructure;
- Government's policy settings must be appropriate to facilitate cost structures that will boost consumer and business uptake of the high-speed network, new retail capabilities and digital content;
- optimal utilisation of existing wholesale state networks to reduce capacity duplication;
- develop and maintain appropriate investment mechanisms to avoid disenfranchised population sectors

j. the role of government and its relationship with the private sector and existing private investment in the telecommunications sector;

The revised decision by the Government to invest in and manage the initial implementation of the NBN is unique. As such, the role of government is critical, and its stable ongoing relationship with the private sector in the context of a public/private partnership (PPP) is key to the success of the NBN. Unhappily, there is not a good precedent history for the success of PPP projects in Australia. This is not to say the PPP model cannot be successful; it will require strong leadership by both sectors, open and frank communications and project management skills of the highest order. The latter is not a key skill inside government, and this must be addressed early by NBN Co, to circumvent any possible future failure.

k. the effect of the NBN on the delivery of Universal Service Obligations services;

Given the unusual and unique demographics of the Australian market, USO's are key to equitable and universal coverage. While this approach is not necessarily supported by mainstream economic arguments, the success of the government's commitment to near universal coverage will depend on government intervention in the open market to ensure subsidised provision if that is what is required to deliver coverage to all communities in Australia.

l. whether, and if so to what extent, the former Government's OPEL initiative would have assisted making higher speed and more affordable broadband services available.

If, as has been stated, the Opel bid offered coverage of approximately 72% of rural and regional area in Australia, AIIA does not consider this offering would have provided Australia with the extensive technological investment required to spur consumer uptake and ongoing further private sector investment.