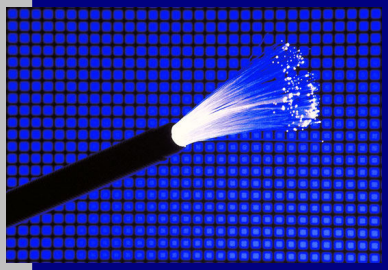
Infrastructure Partnerships Australia is a national forum, comprising public & private sector CEO Members, advocating the public policy interests of Australia's infrastructure industry.

Infrastructure Partnerships Australia



Submission on Senate Select Committee on the National Broadband Network

July 2009

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INFRASTRUCTURE PARTNERSHIPS AUSTRALIA
BUILDING AUSTRALIA TOGETHER

1. Introduction

Infrastructure Partnerships Australia (IPA) welcomes the opportunity to make a submission to the Senate Select Committee on the National Broadband Network (NBN). The development of a NBN will represent a landmark investment in Australia's economic infrastructure and is therefore of critical interest to both the infrastructure sector and the broader community.

IPA has submitted to, and appeared before, previous inquiries of this Committee and welcomes the opportunity for ongoing engagement.

The focus of IPA's submission relates to the fundamental reform to the existing telecommunications market with a view to:

1. market reforms to enhance productivity and efficiency of the sector;
2. models for financing and private sector participation in the programme;
3. promote investment in new infrastructure, and;
4. strategies to ensure the transfer maximum benefit to the community.

2. Background: Internet Access in Australia

Previous submissions by IPA to this Committee have highlighted the current underdevelopment of the nation's telecommunications and more particularly high-speed broadband infrastructure.

The quality and accessibility of current information and communications technology (ICT) infrastructure has been highlighted by the Australian Government as a critical factor underpinning moves to reform the existing network. The Australian Labor Party's 2007 Election policy stated:

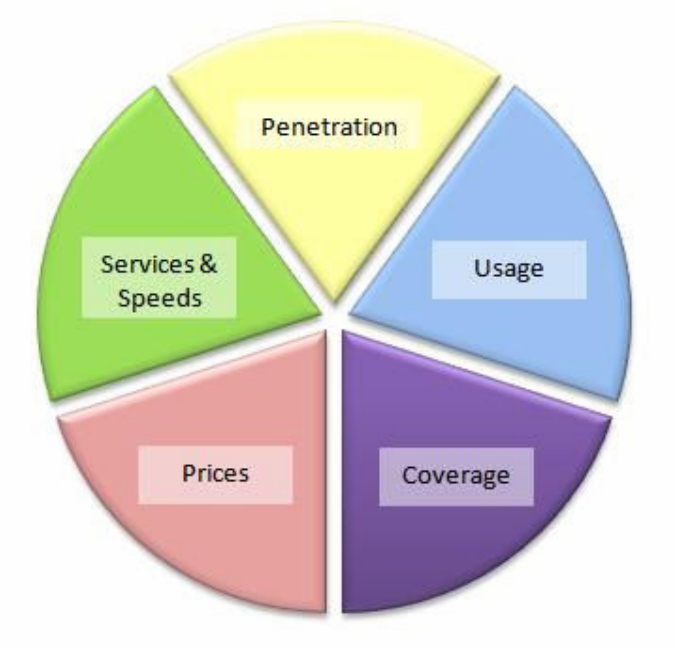
'…for too long, Australian business and education have been struggling with a very slow broadband infrastructure. Currently, Australia ranks 25th in the world for available internet bandwidth.'

The widespread roll-out of high-speed broadband technology has the potential to deliver a major productivity uplift to the national economy. A high capacity, high speed NBN could offer Australia similar advantages to the development of previous infrastructure networks such as the North American railway system and later, the highway and motorcar, which brought together the knowledge and capacity of those times. Done well, high-speed broadband technology has the potential to bring together people, ideas and knowledge in new ways. .

The provision of quality ICT infrastructure is particularly critical to a nation like Australia, which is characterised by centralised population centres, separated by vast distances. The structure of the national economy, specialising in the delivery of high technology products and using a high-skilled, highly educated workforce also reinforces the capacity of the economy to benefit from the roll-out of high speed broadband.

The OECD Directorate for Science, Technology and Industry has undertaken a great deal of work examine the relative ranking of member nations across various indicators in the broadband market. The OECD view industry performance through a prism of five key factors penetration, usage, coverage, prices and services & speed:

Figure 1: Broadband Market Indicators



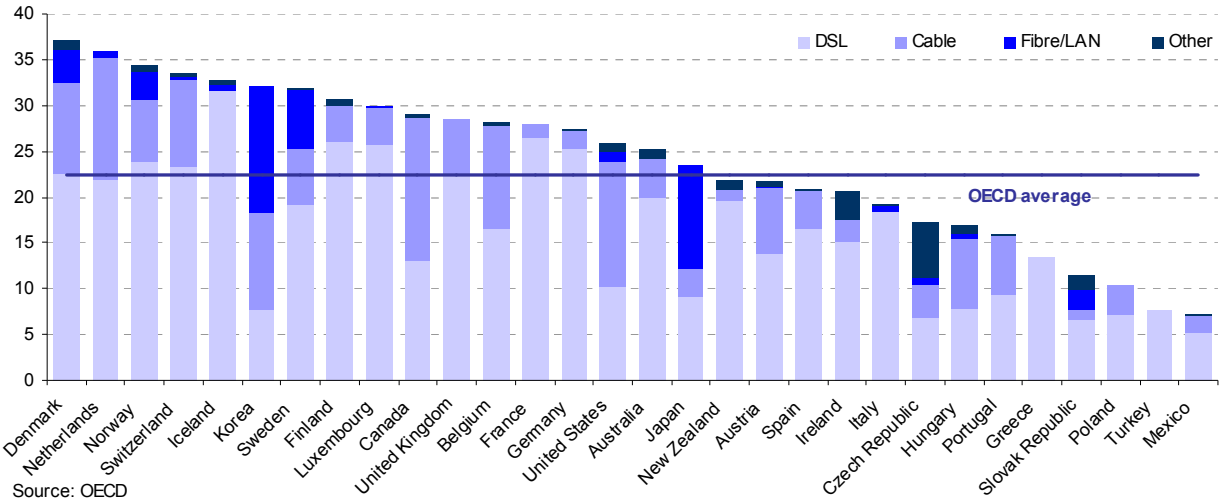
Broadband penetration in particular, provides a useful snapshot into the role of the broadband sector in meeting community expectations as it provides an index of customer demand.

Australia has made some progress at lifting the rate of broadband penetration since 2004, with a penetration rate of 7.7 subscribers per 100 residents to approximately 25 subscribers per 100 inhabitants during 2008[1]. Recent research by the International Telecommunications Union indicates that broadband penetration in the majority of OECD member nations has increased significantly over the past year. Within Australia, the use of broadband technology to access the internet has increased by close to 25 per cent.

Despite the rapid increase in the use of broadband within Australia, little progress has been made in the relative ranking of Australia alongside other OECD countries, where Australia has moved from 21st in the OECD countries in 2004, to 17th in 2007 and 16th position in 2008.

1 International Telecommunications Union (2009) http://www.itu.int/ITU-D/ict/statistics/at_glance/top20_broad_2008.html

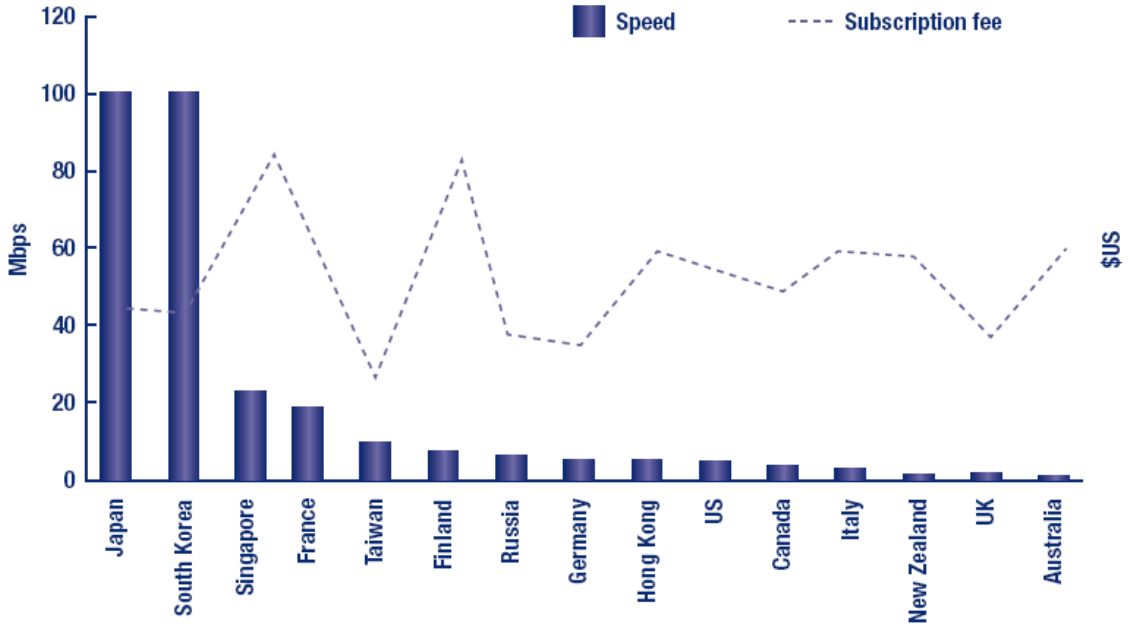
Figure 2: Broadband Penetration by Country, 2008



Source: OECD (2009)

Despite the limited success in increasing the take-up of broadband services, Australian broadband users do not experience the full benefits of the technology. Even users with access to broadband technology experience relatively limited bandwidth and pay a relatively high cost for the service. During 2007, the OECD estimated that the average advertised broadband connection speed in OECD countries equalled nine megabits per second, Australia rated substantially lower approximately 1.5 megabits per second. The speed versus price in peer nations is contained in the figure below:

Figure 3: Broadband (DSL) Speed and Price by Country, 2007



Source: Infrastructure Partnerships Australia (2007)

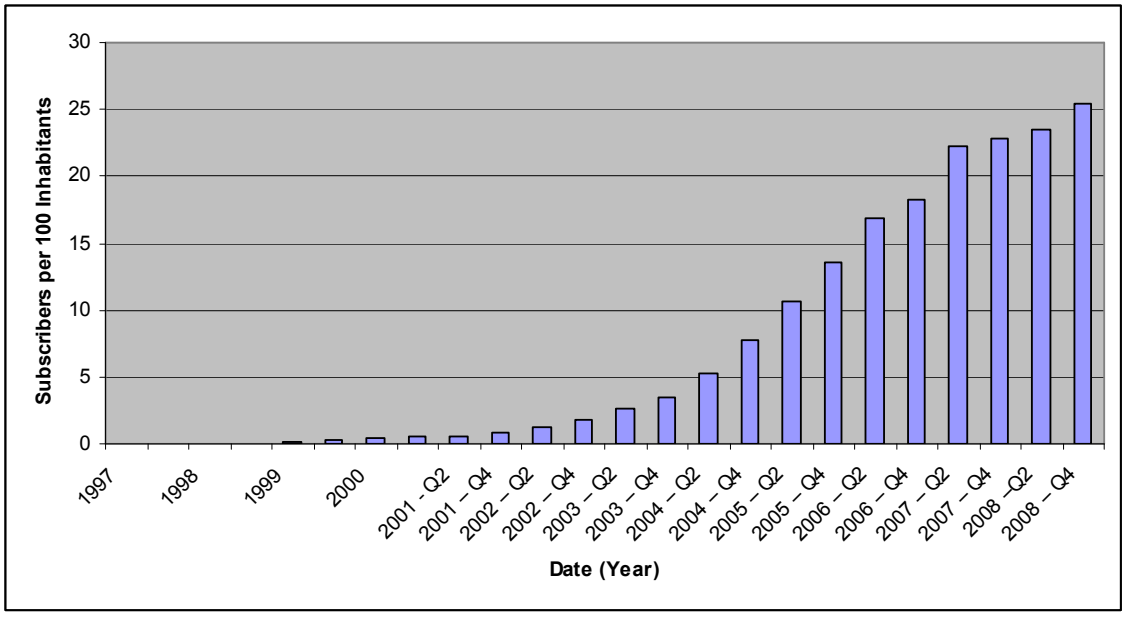
Australia also has one of the highest average broadband subscription fees amongst OECD nations. During 2008, Australia's average subscription fee was listed as the third highest following Mexico and the Slovak Republic. Australia's lowest subscription fee also ranks substantially (10 per cent) higher than the OECD average and the maximum subscriber fee rates as the 8th highest among OECD nations.

There is no doubt that Australia's geography – characterised by dense population dispersed over significant distances is a challenge. But this challenge is comparable with Canada which consistently and substantially outperforms Australia on broadband penetration, price and speed. It is therefore reasonable to conclude that Australian broadband services represent a relatively low base when compared with both the OECD average and those nations geographically like our own.

- **The Current Reform Programme**

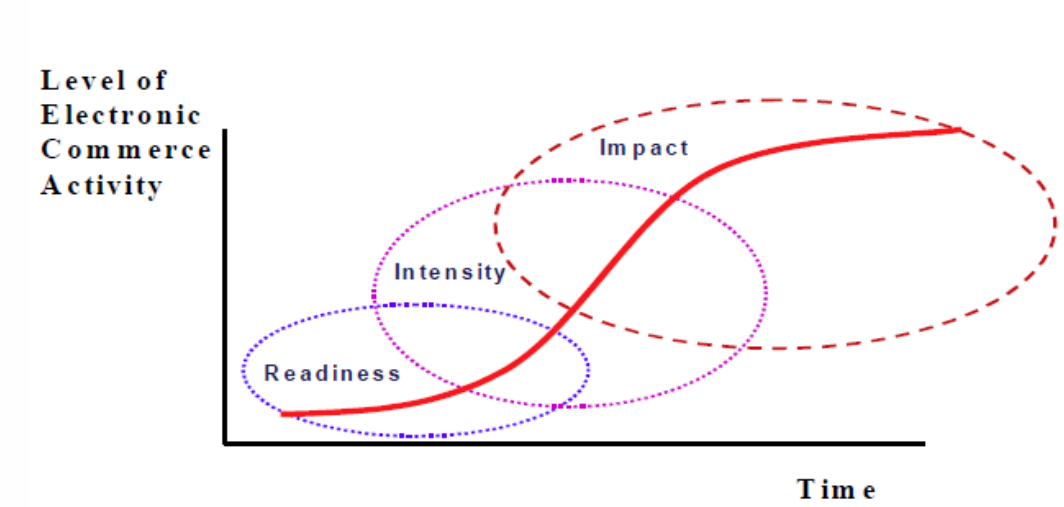
Australian broadband market has recently experienced slowing in the rate of growth in subscriber penetration from early 2007. The current trend illustrating substantial slowing of growth reflects the maximisation of the productivity that can be derived from the current network offering. The dramatic slowing of growth indicates the requirement for a step change in technology in order to drive a new phase of productivity growth.

Figure 4: Broadband Penetration Growth 1997 - 2008



The underlying growth trends in the penetration of broadband in the Australian economy reflect the accepted growth characteristics in the OECD's e-commerce development analysis. The work by the OECD, which is also applicable to not commercial internet usage, reflects an 's-curve' whereby e-readiness grows overtime as consumers anticipate the introduction of new technology or an increasingly competitive market – such as the introduction of increased competition to the Australian broadband market during 2003 – followed by a period of intense growth (intensity) and then the maximisation of the impact of the technology (impact) as it becomes accepted baseline business practice.

Figure 5: Development of e-Commerce Markets and Measurement Priorities: the S-Curve



Source: OECD (2009)

Both the current Australian Government, as well as the previous government, through the Australia Connected policy; has recognised the importance of broadband technology to the Australian economy.

The current National Broadband Network (NBN) proposal for 100 megabits per second fibre-to-the-premises (FTTP) network to 90 per cent of the population, with the remaining regions serviced by 12 megabit per second wireless technology, is likely to provide a more substantial step change from the current broadband network speeds of on average 1.5 megabits per second for DSL and 9.9 megabits per second for cable during 2007[2].

Speeds of 100 megabits per second are widely regarded as the next generation in broadband technology and are currently available in a limited number of countries including Japan and South Korea. Importantly, what the NBN achieves is the delivery of a revolutionary broadband network for the future, moving beyond the evolutionary increases of the past.

The Australia Connected policy focused on increased coverage of fast broadband service speeds to rural and regional areas to areas in line with metropolitan areas. The proposal offered an incremental change in the broadband landscape shifting to a network that provided 12 megabits per second for 99 per cent of the population. The proposal utilised a mix of optic fibre, copper-based broadband technology ADSL2-plus and wireless technology.

The proposal would offer incremental speed increases to the baseline arrangements over a short timeframe – the network was to be fully rolled-out by mid-2009. Against a baseline of slowing take-up of broadband services, it is likely the proposal would have produced a moderate uplift in broadband penetration growth, particularly in the targeted regional areas.

The current weaknesses of the Australian internet and broadband industry are well documented in the Industry Snapshot component of the Government's *National Broadband Network: Regulatory Reform for 21st Century Broadband Discussion Paper* and various submissions to the paper.

[2] OECD Broadband Statistics (2009)

3. The Role of High-speed Broadband in National Productivity and National Growth

Over the past decade the development of high-speed broadband services has become a major focus for governments throughout the world. The recent success in the development of internet and telecommunications infrastructure and the translation to economic productivity is widely accepted and has been demonstrated by various technologies, in various countries.

For instance in Australia, a recent paper examining the link between telecommunications and economic productivity by Concept Economics researcher, Dr. Paul Paterson, examined the link between growth in mobile broadband through the 3G network and economic growth. Dr Paterson found that based on the current of mobile broadband growth, the economy benefits from additional productivity of $7.4 billion annually. This translates into an average of $250 for each Australian household[3].

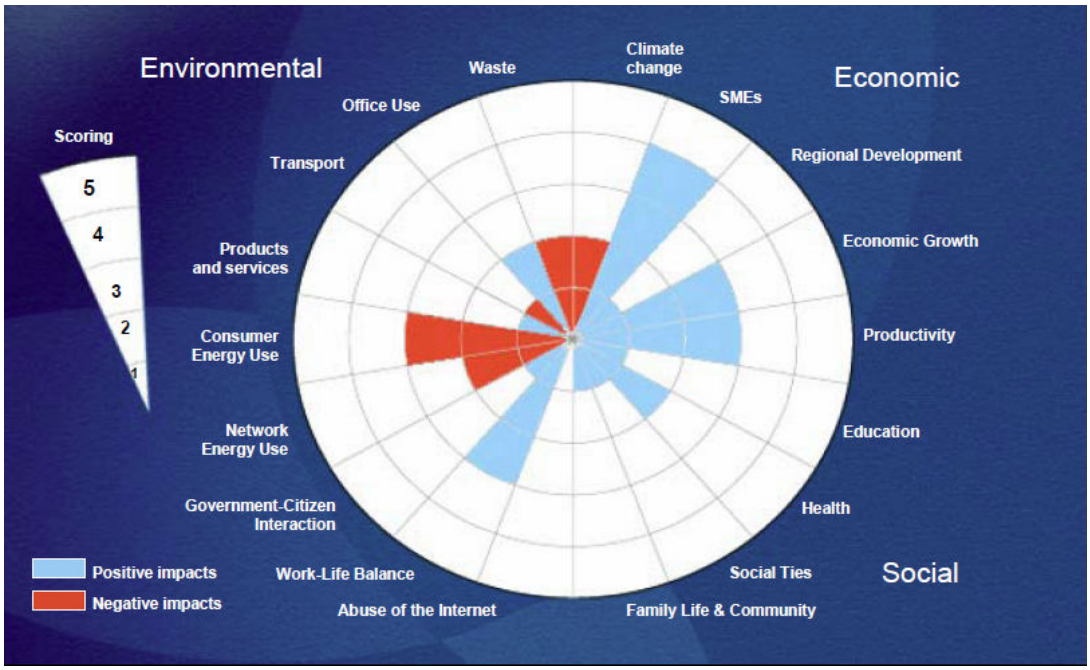
Similarly, work undertaken by Accenture during 2003 notes that next-generation broadband will join previous innovations that sparked long periods of economic growth. Over the next five to seven years, this technology has the potential to contribute $300 billion to $400 billion a year to European GDP and $500 billion to US GDP[4].

During 2001, Accenture undertook an analysis of the economic benefits of universal adoption of next generation broadband in Australia. The Study found that a next generation fixed line broadband network would produce economic benefits of US$9.25 billion to US$25 billion per annum to Australia[5].

In addition, British sustainable development organisation Forum for the Future, undertook a major study into the role of broadband investment in delivering economic, environmental and social outcomes for BT. The study found the development of broadband capacity has substantial positive impacts on the productive capacity of the economy, however potentially led to negative environmental outcome associated with energy and waste usage. The study notes that some environmental implications can be off-set by reduced demand for personalised transport and energy sector innovations, which may include the use of renewable energy sources and smartgrids.

[3] Concept Economics (2009)
[4] Accenture (2003)
[5] Accenture (2001)

Figure 6: the Role of broadband in the Delivery of Economic, Social and Environmental Outcomes



Source: Forum for the Future (2004)

- **The importance of Broadband Availability to Business Decision Making**

The OECD ranked the development of broadband capacity within member nations as the number two ICT priority for the organisation during 2008. Access to world-class ICT infrastructure is highlighted by the OECD and many other international development bodies as a significant factor in the productivity of national economies and the decision by individual businesses to locate within jurisdictions[6].

A central finding of Forum for the Future's work was the substantial positive outcomes for small to medium-size enterprises (SMEs), who benefit from access to new markets, linkages with new suppliers, potential cost reductions as well as a range of other benefits (see Figure 6).

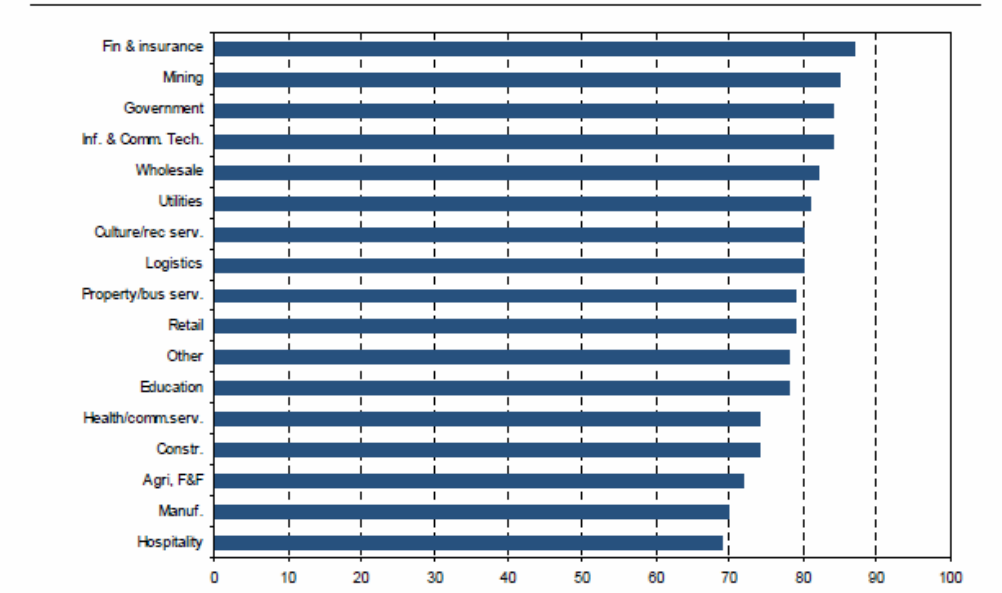
There is also a locational aspect to high-speed broadband availability. In nations where broadband is available across all the major centres, organisations which have many physical presences a country7 but which are all connected by high-speed broadband are able to leverage this technology to make the best use of facilities such as video-conferencing e-commuting, or e-working.

Simply put, effective and high-speed broadband is extremely important to the economic competitiveness and social connectivity of a nation. It also plays a valuable role in attracting business, particularly for the establishment of regional headquarters, or for the establishment of emerging technology-driven industries such as health, education and biosciences, as well as by key established Australian business sectors such as finance and insurance, mining and ICT.

[6] OECD Broadband Statistics (2009)

As ICT becomes more embedded and entrenched in modern society, its importance as an indicator of economic competitiveness will likely grow. Concordantly, nations and regions which intend to attract new industries, and remain hubs for regional headquarters, need to invest and innovate in competitive next generation ICT.

Figure 7: Importance of Telecommunications in Strategic Planning – by Sector (Mean Importance Scores Out of Maximum 100)



Source: Concept Economics 2009

- **Role of Broadband in Economic Stimulus**

Following the advent of the Global Financial Crisis, governments from across the world have undertaken investment in productive economic infrastructure to underpin growth in their national economies. Governments from across the developed world have included funding for improved broadband capacity as a central component of economic stimulus packages as a response to the current financial turmoil. These countries include Britain, Canada, Finland, Germany, Portugal, Spain and the United States.

Alongside these nations, France, Hungary, Ireland, Japan and South Korea are currently undertaking major investment in additional broadband infrastructure capacity, supporting broader economic development and productivity goals.

- <u>The United States of America</u>

The Obama Administration in the Untied States Government has committed $7.2 billion through the Recovery Act for the acceleration of broadband deployment in areas of the country that have been without infrastructure to support high-speed services.

The package constitutes two components, the first, $4.7 billion Commerce Department's National Telecommunications and Information Administration (NTIA) to deploy broadband infrastructure in unserved and underserved areas in the United States, expand public computer centre capacity and encourage sustainable adoption of broadband service. The second component includes $2.5 billion to the U.S. Department of Agriculture's Rural Utilities Service (RUS) to facilitate broadband deployment in rural communities.

- United Kingdom

The UK has made a modest commitment towards the extension of broadband technology as a component of the nation's economic stimulus investment. The investment, outlined in the Digital Britain White Paper confirmed a goal of connecting all UK households with a speed of at least 2Mbs, leveraging wireless and fixed line technology. The reform is in effect an extension of the existing universal service obligation on BT, and would make use of wireless networks as well as fixed to deliver the service.

The proposal also incorporates a three year plan to further develop broadband services in partnership with the private sector, and to establish a specific funding mechanism, based on a levy on established fixed line services, for future as well as a broadband tax to provide a new funding source for next-generation broadband networks.

The White Paper points to current plans for the commercial roll-out of 50 megabit per second services as an important step towards the delivery of world-class systems.

- European Union

On 20 March 2009, the European Council reached agreement to allocation one-fifth of the European Union's (EU) stimulus package to the development of broadband technology. The investment from the EU recognises the importance of a common platform from which market-based service providers can compete on an even playing field.

The EU Telecoms Commissioner, Viviane Reding, recently commented on the importance of the current investment by the EU and member nations in broadband technology as central to both short-term economic stimulus and the long-term economic prosperity of the region.

> *'Not only do we need a European Broadband Strategy to prompt a speedy recovery from the economic crisis… I would suggest that just as important for Europe's recovery are the long-term economic benefits of high-speed broadband.'*[7]

4. Market Reform and Competition in the Telecommunications Industry

The OECD stated in its 2008 Report OECD Information Technology Outlook 2008 Highlights:

> *'Broadband is an enabler of structural change, the creation of new digital services, and it boosts firm efficiency, improves competition and underpins globalisation. Broadband spurs ICT innovation and ICT-enabled innovation, for example in developing collaborative R&D, making cloud computing possible and enabling new ways of organising research.'*

The National Broadband Network (NBN) delivers a scale of physical strengthening in Australia's fixed line communications network not seen since the roll-out of the existing copper network. It will provide a fundamental overhaul in the way information is shared and business is conducted; however beyond the physical components, the NBN reform offers the opportunity to fundamentally realign the current market structure in order to improve its efficiency and increase its productivity.

The significance of the opportunity for market reform was recognised by senior Ministers, including the Prime Minister, the Treasurer, the Minister for Finance and the Minister for

[7] Asavin Wattanajantra (2009) 'EU Says Broadband Key for Economic Recovery' IT Pro http://www.itpro.co.uk/612109/eu-says-broadband-key-for-economic-recovery

Broadband, during their announcement of the new NBN structure on 9 April 2009. A statement published by the four Ministers noted:

> *'The new investment is also the biggest reform in telecommunications in two decades because it delivers separation between the infrastructure provider and retail service providers. This means better and fairer infrastructure access for service providers, greater retail competition, and better services for families and businesses.'*[8]

A principle driver of the need to reform the market structure is the potential exploitation of monopolistic characteristics within the fixed line market and the difficulties inherent in existing regulation to deliver a truly competitive market.

This lack of competition occurs in spite of the operational separation between the retail, wholesale and network divisions of the incumbent. The objective of this structure is to allow Telstra to obtain legitimate benefits from its vertical integration in the market, while ensuring it cannot discriminate in favour of its own retail activities over those of its wholesale customers.

Infrastructure Partnerships Australia has previously submitted to the Committee on the shortfalls of the current regulatory framework. It is broadly accepted that the current market structure has faced challenges in ensuring a robust, competitive market between a vertically integrated, operationally separated Telstra and other market participants.

Pricing principles have similarly faced challenges in providing an effective, competitive framework for the negotiation of the necessary terms and conditions to encourage the strongest and most competitive market.

- **The Established Fixed Line Market**

By global standards, the penetration of broadband internet into Australian homes – and the speed of the available service – has been relatively poor. Australia ranks 17th in the OECD in household penetration of broadband.

Since competition was introduced in telecommunications in Australia, operators in the sector have been subject to rules to prevent anti-competitive behaviour. Specifically, the incumbent network operator, Telstra, is required to maintain operational separation between its divisions for retail, wholesale and network services. The objective of this requirement is to allow Telstra to obtain legitimate benefit from its vertical integration in the market while ensuring it cannot discriminate in favour of its own retail activities over those of its wholesale customers.

Unfortunately, the current regulatory and policy framework has not facilitated an optimal level of competition between retail service providers in the telecommunications marketplace.

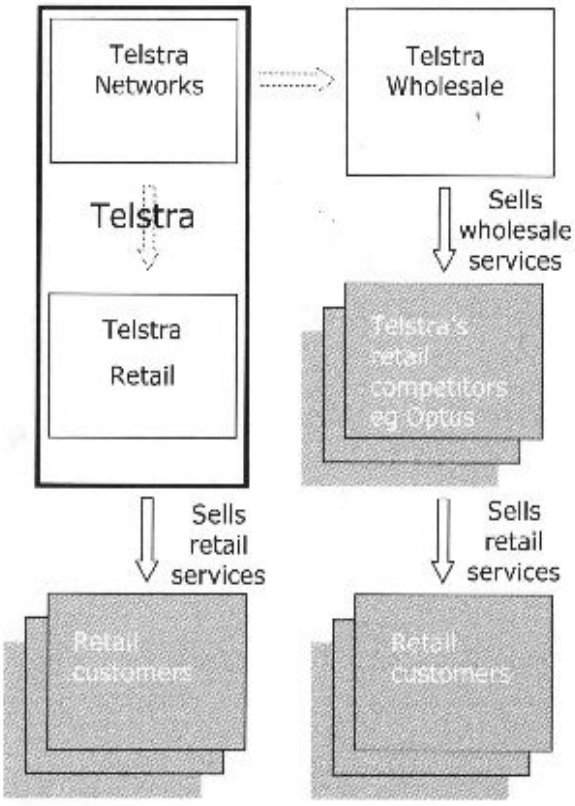
In addition, uncertain conditions and obstacles to effective competition in the Australian telecommunications market have significantly inhibited investment in physical infrastructure by access seekers, resulting in little infrastructure-based competition at a retail level.

In homes and businesses that do have access to broadband internet, the bandwidth available is relatively low and the price at which it is available is relatively high.

[8] Rudd, Swan, Tanner, Conroy (2009) 'Joint Media Statement: New National Broadband Network' http://www.minister.dbcde.gov.au/media/media_releases/2009/022

Limited self-regulatory mechanisms and unduly complex processes in the existing regulatory framework have led to concerns that Telstra leverages its market power, derived from control of the physical network infrastructure, to limit competition and consumer choice.

The current regulatory environment undermines retail competition in a way that the current regulatory framework cannot control. Vertically integrated operators can refuse to sell services to their retail competitors and can provide higher performance standards to their retail customers. This enables such organisations to disadvantage wholesale customers by squeezing retail-wholesale prices and limiting service quality.



While these actions could be seen as rational attempts to protect market share, a market structure which allows for these practices is clearly not able to deliver sufficient competitive tension. The national interest is best served through competition in the telecommunications sector.

IPA submits that the current regulatory and policy framework has not facilitated the optimal level of competition between retail service providers in the telecommunications market. Consequently, the current regulatory regime has not succeeded in delivering the best possible outcome for Australian consumers.

- <u>Recommended Reform of the Current Fixed Line Market</u>

With the imminent roll-out of the NBN, and the commitment from the government to implement a model of structural separation of wholesale and retail businesses, the Government has a timely opportunity to adopt a new approach to regulation in the market for existing telecommunications services.

Infrastructure Partnerships Australia submits the government should move down a regulatory path that provides structural separation by splitting the existing Telstra business into two new entities, a wholesale (or access services) provider and a retail access company. Existing Telstra shareholders should be compensated through the splitting of existing shareholdings in a one-for-two exchange of shares, from the single current entity to the two new businesses.

Beyond the current constituency of share ownership, the two organisations should operate as separate entities, with separate governance structures, including a Board, Chairman and Executive, and over time, through natural market-driven turnover of shares, also ownership.

Through moving to 'two-Telstras' model, substantial new competitive tension can be introduced to the marketplace at retail level in the current fixed line market over the short-

term and will allow shareholders in the existing entity to derive maximum value from their current investment.

Following the introduction of the NBN, it is likely that the existing copper network will become devalued, subsequently threatening total shareholder value. However, through the separation of the entity, the value of the Telstra retail business, including fixed line retail and arguably the world's fastest 3G mobile service, is assured and the wholesale business opens itself to increased flexibility in terms of long-term innovation, such as very high bit rate digital subscriber line (VDSL) which is successfully utilised internationally to deliver broadband speeds of up to 100 mega bits per second.

Over the longer term, the 'two-Telstras' model will also assist in ensuring the take up of services on the National Broadband Network through removing disincentives for Telstra's full participation in the network. Less competitive pricing strategies within the domestic telecommunications market, such as those associated with the introduction of HFC Cable; indicate that under the current market regime significant disincentives may not exist to discourage these practices.

Through legislating to structurally separate wholesale and retail components of Telstra, the current incentives for anti-competitive wholesale pricing practices that artificially suppress prices for one retailer, new incentives will be created in both the retail and wholesale markets for innovative business practices.

At the wholesale level, more innovative operation of the fixed line copper network in order to increase the longevity of the existing asset and to attract additional users, through practices such as unbundling, will be substantially increased whereby increasing the efficiency and productivity of the entire network.

The Australian Competition and Consumer Commission have expressed their support vertical integration in the telecommunications sector. The ACCC's Graeme Samuel has said:

> "*A vertically separated ownership model could reduce incentives for the access provider to discriminate between downstream users of the access service and, therefore, facilitate strong and effective competition between access seekers in retail markets*."[9]

- **The National Broadband Network**

The small size of the Australian market and the high fixed costs associated with building the network infrastructure required to deliver high-speed broadband will mean duplication of the NBN is unlikely, even over the longer-term.

The structure of the NBN, effectively duplicating and substantially improving on the existing copper network, will substantially devalue much of the existing telecommunications infrastructure investment made by both Telstra and other market participants. Infrastructure such as that installed in exchanges as well as current broadband networks, such as cable, will potentially cease to offer a competitively viable service.

The existing fibre networks maintained by industry participants should provide the foundation block for the NBN. Many established fibre assets could provide useful components of the new network as they are largely concentrated in densely populated capital cities. The utilisation of these assets as the platform for the roll-out of the NBN provides an opportunity

[9] Graeme Samuel, ACCC, Regulatory Update for 2008, Speech to Australia Telecommunications Users Group Annual Conference, Sydney, 13 March 2008.

to reduce the costs of roll-out, truncate the delivery timeframes for the delivery of the network and expediently open the NBN to the nation's largest markets – whereby facilitating high penetration rates.

Those fibre-based assets owned by existing network participants, including Telstra and others, if incorporated into the NBN provides a potential opportunity to significantly reduce the total cost of the network to the Australian taxpayer, while also ensuring that existing industry participants can receive just compensation for their investments to date.

In order to ensure the effectiveness of the roll-out of the National Broadband Network, and particularly to secure competitiveness of retail product offerings, it will be essential to ensure a clear strategy is put in place to facilitate the continued diversity within the retail service providers. Organisations who have invested substantially in the creation of a competitive broadband market should not be penalised for their previous investments.

It is therefore vitally important that an appropriate market structure is put into place from the outset in order to maximise the competitiveness of the industry and to reduce barriers to entry and participation for new and established market participants.

Key principles for the NBN's regulatory framework to ensure competitiveness:

1. Price equivalence: The NBN owner must sell to all resellers at the same price – consistent with Government policy that the network has "uniform wholesale pricing".

2. Operational equivalence: The NBN owner must use the same process to provide access service to all users with all retailers supported by the same provisioning systems and processes, operational support systems, billing systems, access to the same customer databases and records.

Given the monopolistic nature of the NBN, IPA considers that the owner should ensure that the NBN is competitive through structural separation of the wholesale business from retail business arms.

IPA supports the commitment of the government to separate ownership of this new network from downstream retailers. Structural separation is widely regarded as international best-practice within the telecommunications sector and domestically has been the default approach for reform of markets in the gas and electricity sector.

In short, those seeking access to the NBN must each have identical rights to receive the same service at the same price to then sell to consumers. Furthermore, IPA also believes the most stringent safeguards must be in place to ensure this remains the case, possibly undertaken through the ACCC.

In addition to developing a regulatory framework which delivers true and effective structural separation, changes to the regulations are needed to deal with access and pricing issues.

The experience of the ACCC, as with its existing responsibilities for competition and economic regulation of telecommunications, would be appropriate as the body for performing critical oversight functions in the NBN environment. While the ACCC would require more resources to perform such functions, there are natural synergies for the organisation in such a role given its considerable experience regulating other industries that have well-functioning, albeit regulated, markets, such as the gas and electricity sectors.

IPA suggests the Government reform the regulations to ensure access terms and prices are subject to approval by the independent regulator, the ACCC. IPA considers that the ACCC should have an active role in setting prices in the telecommunications sector and be directly involved in setting the initial prices for access to the new NBN.

IPA makes the following recommendations regarding structural separation of the NBN and the potential function of the ACCC:

- Regulatory mechanisms to guarantee access to facilities should be secured beyond legal challenge.

- It is imperative that Government ensures the NBN operator and access providers are unable to discriminate in favour of their own services over those of other services or applications.

- Changes to the regulations to deal with access and pricing issues are necessary.

- The experience of the ACCC, as with its existing responsibilities for competition and economic regulation of telecommunications, well qualifies the body for performing critical oversight functions in the NBN environment.

- While the ACCC would require more resources to perform such functions, there are natural synergies for the organisation in such a role given its considerable experience regulating other industries that have well-functioning, albeit regulated, markets, such as the gas and electricity sectors.

- The Government should empower the ACCC to perform critical oversight functions in the NBN environment, such as approving access terms and prices.

- The Government reform the regulations to ensure access terms and prices are subject to approval by the independent regulator, the ACCC. The ACCC should have an active role in setting prices in the telecommunications sector and be directly involved in setting the initial prices for access to the new NBN.

- Later changes to prices should also require ACCC approval.

IPA also recommends the Government empower the independent regulator to step in and set access terms that it considers are reasonable in situations where it judges terms for access are unreasonable and not in the long-term interests of end-users.

Failure to deliver a new, competitive market structure that fosters contestability of supply will frustrate the social and economic objectives of the Government in investing in the NBN. Structural separation is critical if NBN is to fulfil its optimal role in boosting Australia's economic prosperity.

5. Selection of an Procurement Model

- **Consumer Readiness, Price and Commercial Viability of the Network**

In order to ensure the success of the National Broadband Network it will be essential to ensure that the network is utilised by a substantial proportion of the Australian population. The usage of the network will be a vital component to ensuring downward pressure on price, increasing affordability for all consumers, and ensuring the commercial viability of the network for operators.

Consumer readiness provides the principle measure of the willingness of consumers to adopt and utilise new information and communications technology. The factors that underpin consumer readiness for new technology are represented in the national 'e-readiness' ranking. The results of this can have a major implication on the effectiveness of technology deployment.

The development and roll-out of many new technologies are often under-utilised for significant periods of time. The rollout of digital and interactive television is a recent Australian example of the influence that low customer readiness can have on the take-up rate for innovative technology. The current campaign to promote digital switch over illustrates the importance of customer readiness in ensuring the take-up of new generation ICT.

While Australia ranks amongst the top ten nations for 'e-readiness' in the 2009 survey, the position of the nation has declined from the previous 2008 survey. The declining position, and the reduced appetite for new internet and broadband technology, can be linked in part to the decline in innovation in the current fixed line market.

In the last decade, the introduction of competition in the ITC industry, and the corresponding decrease in price and increase in other services such as download limits, lead to an increased take-up in broadband services in Australia, hence the increase in e-Readiness. However, innovation has slowed in recent years with regard to the existing fixed line network, meaning Australia has slid in e-Readiness from 4th to 6th in the world (see Figure 7).

Figure 9: e-Readiness Rankings and Scores, 2009

2009 rank (of 70)	2008 rank	Country	2009 score (of 10)	2008 score
1	5	Denmark	8.87	8.83
2	3	Sweden	8.67	8.85
3	7	Netherlands	8.64	8.74
4	11	Norway	8.62	8.60
5	1	United States	8.60	8.95
6	4	Australia	8.45	8.83
7	6	Singapore	8.35	8.74
8	2	Hong Kong	8.33	8.91
9	12	Canada	8.33	8.49
10	13	Finland	8.30	8.42

Infrastructure Partnerships Australia submits that central to the maximisation of the adoption of the NBN will be the assurance of consumer readiness for the adoption of new technology through the continued maximisation of existing infrastructure through further innovation and increased service competitiveness.

This will be critical to ensuring that as the NBN comes online, consumers are ready and willing to subscribe to the service in a relatively short period of time.

It is widely regarded that not all customers will be willing or unable to cover the additional costs associated with access to a very high speed broadband service. Many potential users of broadband technology may under-value the addition infrastructure capacity as they lack the supporting infrastructure, education and training to utilise the service.

For this reason, it is arguable that a tiered system or service offering, based on a lower service and price offering, is desirable in order to encourage maximum adoption of internet technology within the community.

IPA considers that for the NBN to be viable and effectively over the long term, it will require a level of take up in Australia of at least two-thirds of the population, with an even higher rate in applicable businesses. The reason for this is that a take-up of this magnitude would allow very competitive wholesale prices, meaning retailers could offer vastly improved speed and quality of service at prices which are both affordable and in line with prices offered today for inferior fixed line services.

- **Ownership, Governance and Operating Arrangements**

Infrastructure Partnerships Australia supports the commitment from the government to form a partnership with the private sector for the development and roll-out of the National Broadband Network.

The commitment from the Government to work with the private sector in partnership of the development of the network provides an opportunity to harness the significant capacity of the private sector, while ensuring the development of a network that secures competitive neutrality for retail operators.

Quite simply in the current financial climate, and arguably indefinitely as a result of its size, the delivery of the National Broadband Network, an alternative network with similar coverage, would not be possible within a significant commitment from government. There are a range of factors that lead to this conclusion, including the vast distances required for the roll-out of the network, the competitive tension with existing copper line network and the current market structure.

The commitment of government to ensuring the roll-out of next generation broadband technology is not uncommon. The United Kingdom, the United States, South Korea, Japan and others have committed to substantial government investment in the roll-out of networks that facilitate retail level commercial competition between service providers.

As the public sector provides to the development of the network a degree of certainty in financing, the private sector will bring a commercial dimension to the development of the project helping to bring a degree of financial stringency to the project and driving innovation.

A substantial base of research shows that PPPs deliver substantial savings in both time and cost, when compared to traditional methods of procurement. A comprehensive examination of PPPs by the UK Auditor General confirmed this, finding that 73 per cent of traditionally procured projects were over budget and 70 per cent were delivered late.

By comparison, just 20 per cent of PPP projects were over budget and only 24 per cent were delivered late. The Australian experience has been just as fruitful. In late 2007 a landmark Infrastructure Partnerships Australia study – prepared on commission by the Allen Consulting Group and Melbourne University - demonstrated the value of PPPs over traditionally procured projects. In our study, PPPs demonstrate superior cost efficiency over traditional projects ranging from 30.8 per cent from project inception to 11.4 per cent from contractual commitment to final outcome.

The IPA study found that in absolute terms, the PPP cost advantage was both economically and statistically significant. On a contracted $4.9 billion of PPP projects, the net cost over-run was $58 million; while on $4.5 billion of traditionally procured projects, the net cost over-run

was $673 million. Time over-runs on a value-weighted basis showed that traditionally procured projects performed poorly - completed 23.5% behind time, while PPPs were completed 3.4% ahead of time, on average.

Beyond the initial commitment to the role of the private sector in the development of the network, an ongoing review of opportunities for commercialisation of components of the project, or the early exit of the government from network ownership should remain a focus for government.

The development of the governance model for the network must seek to bring to the project individuals with a strong focus on ensuring the successful commercialisation of the project over the short-term. The appointment of key people within the Broadband Authority with experience in financing, regulating and constructing infrastructure will be critical to the success of the project in attracting capital.

In particular, to ensure the project is viewed credibly, the Chairman and CEO of the Broadband Authority must be selected from pre-eminent individuals selected from closely aligned professional fields.

- **The Use of Infrastructure Bonds**

The underlying tightening of global capital markets that has developed as a result of the Global Financial Crisis has substantially limited the capacity of the private infrastructure sector to raise capital to independently finance the development of economic infrastructure.

The unprecedented changes in the global financial market have led to an environment where the capacity of Australian industry to secure the debt needed to deliver large infrastructure projects is severely constrained.

The prolonged impacts of the global financial crisis, and the potential for a gradual return to strong growth, has resulted in the need for the Commonwealth Government to take measures to bolster and reinforce financial market stability and to temporarily fill the gap in lending capacity for major infrastructure projects.

The commitment from the Australian Government will make an initial investment in this company but intends to sell down its interest in the company within five years after the network is built and fully operational, consistent with market conditions is an appropriate strategy for the current environment and reflective of the size and innovation of the project.

Infrastructure Partnerships Australia supports the use of infrastructure bonds, as form of Treasury issued paper, as a method to secure new funding for the development of the broadband network.

The issuing of specific Treasury bonds for the financing of major infrastructure, particularly on the scale of the NBN, is a prudent and responsible strategy to ensure new projects can be brought to market under current financial circumstances.

Infrastructure Partnerships Australia has released a major study in to strategies to facilitate the financing of economic infrastructure during the current economic downturn; the paper Financing Infrastructure in the Global Financial Crisis is available at www.infrastructure.org.au .

6. Conclusion

Infrastructure Partnerships Australia supports the commitment by the current government to the development of high speed, affordable National Broadband Network. The development of the NBN will represent the single largest investment in infrastructure in the nation's history.

A competitive, affordable network will benefit Australian consumers and businesses alike, driving productivity outcomes, social and environmental outcomes. The develop of a substantial infrastructure project of this type is given added impetus and by the onset of the Global Financial Crisis and the subsequent focus on the development of productivity boosting infrastructure. Governments from across the developed world have placed a substantial focus on investing in broadband infrastructure, in partnership with the private sector, as part of a plan to stimulate productivity and economic growth.

The delivery of next generation broadband services is critical to sustaining and enhancing Australia's economic growth and ensuring consumers and businesses fully benefit from all the opportunities offered by the global digital economy.

Beyond the commitment to the physical infrastructure, Infrastructure Partnerships Australia recognises the current reform agenda, underpinned by the essential duplication of the existing fixed line network, represents a substantial, once in a generation opportunity to fundamentally reform the market structures the underlie the national ICT industry.

In addition to the creation of a world's best practice market for broadband services it is vital that the government utilises the current opportunity for the reform of the existing network in order to drive shot-term

IPA submits that significant regulatory reform towards a more competitive environment will be critical if the Government is to achieve its policy objectives and realise anticipated benefits from the NBN initiative. The development and roll-out of 3G mobile technology in the domestic market, as well as international fixed line markets, has illustrated the importance of ensuring 'e-readiness' in advance of the deployment of step change technology.

In order to ensure the development of the NBN is able to achieve the objectives of the government in terms of increasing the utilising of next generation technology, it will be essential to ensure the role of the current fixed line network is maximised.

As it appears inevitable that the NBN will involve a monopolistic market structure, it is essential for the NBN's regulatory framework to ensure a truly level playing field and maintain the neutrality of services over the internet. IPA considers the best way to regulate the NBN, and the established fixed line market, is to structurally separate wholesale and retail operations.

IPA submits that changes to the framework governing access and pricing are also desirable. To this end, we suggest that the Government empower the ACCC to take a more active role in setting prices in the telecommunications sector. IPA submits that the ACCC should be directly involved in setting prices for access to the new NBN.

IPA also recommends empowering the independent regulator to step in and set access terms that it considers are reasonable in situations where it judges terms for access are unreasonable or not in the long-term interests of end-users.

If you would like to discuss the IPA submission, please don't hesitate to contact our National Manager, Policy – Mr Peter Colacino (02) 9240 2050

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