Submission to the

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Broadband Network

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Summary

The need for a National Broadband Network is no longer based solely on the commercial returns from Internet access and other communication services. It also incorporates the social and economic benefits provided by such infrastructure. In Australia, the government is looking at using next-generation telecoms infrastructure to promote the digital economy including: telehealth, tele-education, smart grids, media and other Fibre to the Home (FttH) applications.

Australian government is leading the way

The $4.7 billion that the Australian Government is prepared to invest in a National Broadband Network (NBN) offers Australia a unique opportunity to shift the broadband emphasis from a high-speed Internet service to a national infrastructure for the digital economy that will underpin a range of positive social and economic developments.

This makes Australia one of the first western countries where the government is taking a financial partnership role in the development of national broadband infrastructure (Japan and Korea have made similar investments in the past). The funding is managed from the National Infrastructure Fund (and not from an industry-specific fund such as, for instance, a telecoms fund). This puts this investment in the correct context – infrastructure, not telecoms.

In Australia, the original plans for government broadband funding were developed because of the need for regional broadband; however, with a new government in place since November 2007, the agenda has expanded and the Minister for Broadband, Communications and the Digital Economy, Stephen Conroy, has on many occasions (most recently at the OECD meeting in Seoul in June 2008) stressed the social, environmental and economic importance of his NBN policy.

From an international perspective this is rather a unique position for a national government to take, in that the 'business case' for such a network is no longer simply based on the commercial returns from Internet access and other communications services alone, but also includes the social and economic benefits of such an infrastructure.

The NBN is the largest single Budget item from the new government (apart from tax cuts). This government leadership has unleashed a national debate on broadband, infrastructure and applications and it is creating a dynamic environment in which new ideas, new approaches, new concepts and new business models are being discussed. Thanks to this debate Australians are among the world's best-informed people on the subject of broadband. This offers a great opportunity for debate around the broader benefits and implications of such a national infrastructure for the digital economy – in most other countries these discussions are largely restricted to the industry itself.

It is this mindset that is creating an interesting policy framework which could have far-reaching international implications. The Australian model is being studied keenly by other countries, particularly those in Europe.

Essential for health, education and energy services

In Australia the emphasis of the discussion is slowly shifting from access to applications and that is where the digital economy kicks in. It has been estimated that this economy can add one to two points to national GDP.

In investigating and discussing FttH applications such as telehealth, e-learning, e-government and smart grids it has become increasingly clear a universal service needs to be provided for these applications. In order for this to happen, an independent end-to-end infrastructure access regime is required. This which will enable organisations who wish to use this national infrastructure to deliver their services more efficiently and effectively. Governments need to be able to provide these services to all their citizens, regardless of whether they have an Internet or telephone subscription with the telcos.

These services can't be delivered on an economically viable basis within the current vertically-integrated infrastructure/services environment. Government authorities could not afford to distribute their healthcare, education and energy services based on these vertical structures.

There is general agreement on the necessity for reining in the costs of healthcare, aged care and education while at the same time improving their quality. This cannot be done without Information & Communications Technology (ICT) – e-services are absolutely essential to address these national social and economic problems.

The same applies to energy services. Nobody disputes the fact that we need to be more energy efficient and effective – and smart or intelligent utility networks are a crucial element in assisting this process.

It makes sense to use new national fibre telecoms infrastructure as much as possible for these national applications. However, in order for organisations to be able to use the national broadband infrastructure effectively it must be made available on an incremental cost basis. It cannot be priced according to vertically-integrated network/service structures. The rate of return on infrastructure investments required for vertically-integrated telecoms is nearly double that of the ROI required by utilities-based infrastructure.

Governments will be unable to afford to deliver these social services based on the ROI required by vertically-integrated telecoms companies; nor will users be able to afford access to three services under business models based purely on generating profits for the shareholders of the incumbent telcos.

FttH business models, therefore, will need to take the national social and economic benefits into account as well. The Australian government recognised this, hence its $4.7 billion investment.

The solution will involve changes to telecommunications and energy legislation so that existing infrastructure can be used for these services. It would make no sense, and it would be far too costly, to overbuild existing national telecoms networks to avoid expensive telecoms charges. International data indicates that there is no business case for overbuilding national fibre networks. In order to be able to deliver an affordable broadband service penetration on these networks would need to be at least 50%. And to stimulate competition, innovation and the developments of telehealth, smart grid and tele-education sharing of national infrastructure is essential.

In designing FttH networks the requirements of these third parties need to be taken into account in the topology of the networks, right from the start.

Whole-of-government approach is necessary

The industry is currently involved in a number of discussions on these topics with various government departments – Environment, Climate Change, Energy, Health, Education and Communications. At the same time they have initiated a broad industry group – the Digital Economy Industry Working Group (a network of 200 people representing 140 organisations) covering telecoms, IT, utilities and the media. Within this network there are subgroups – brownfield, greenfield, applications, smart grids and CEOs. These groups develop vision statements, high-level strategies, addressing specific issues in relation to these topics and preparing submissions to the government on policies and regulations.

The CEO Forum has been established to discuss the social and economic strategies needed to establish nationwide fibre networks. The group is proposing a Digital Economy Council; a national stakeholders group of the key authorities and organisations in need of national FttH applications (Healthcare, Education, Energy and Media). In order to move forward, future FttH policies and developments will need to be based on their requirements, rather than on stand-alone technical telecoms parameters such as speed and capacity.

The applications mentioned above, are not new and have been discussed for well over a decade. However this has not led to any large-scale introduction of these applications. A key reason for that is that so far the discussions have failed to address a national infrastructure plan (blueprint), with appropriate policies and regulations to underpin these developments.

Regulatory frameworks are failing

Most current telecommunications policies and regulations are not aimed at achieving the right national infrastructure and industry structures needed for the development of a digital economy. Regulatory

frameworks governing infrastructure in most countries are actually working against an effective and efficient use of the infrastructure assets.

For that reason there is a significant degree of paranoia about having someone else's services on your cable, duct or right-of-way! The individual government departments in any state or federal body are sometimes even more inflexible than the incumbent telcos and the utilities. These bureaucratic bodies are often difficult to shift, as they hide behind regulations, self-protection and ignorance. There certainly is no whole-of-government (W-o-G) approach, despite the fact that many politicians claim to promote such an approach.

The industry, also, is not blameless. In most cases there is an unholy alliance between the electrical engineers, who are protecting their patch, and the electronics engineers, who are fearful of commercial entities that may beat them in negotiations or technology. As there is no commercial driver for these groups they lie low and wait for it all to pass over. Meanwhile thousands of kilometres of fibre are languishing and the government neither recognises its value nor has the will to reap the benefits.

In Australia, in particular, there is an even bigger potential party-stopper. The incumbent telco Telstra has, in very strong language, indicated that it is absolutely opposed to any structural changes and has threatened the government with '*the mother of all legal battles*' if the government were to embark on such a regulatory approach. No other telco in the western world has shown such deep contempt for government policies.

National benefits are astounding

However, the community benefits that could be gained from utilising these assets would be astounding and this warrants very strong government leadership. Telehealth, aged care, telemedicine, e-local government and e-learning services could all be provided over this national infrastructure.

Exhibit 1 – Telehealth benefits of utilising national communications infrastructure

• It has been estimated by government advisors that in Australia, telehealth can save the country $30 billion over the next ten years. Putting this in a European context we would be talking close to €600 billion.
• Energy savings of 25% can be achieved by smart grids.
• Patients and older people can be monitored by video nurses, linked to video-based community support networks.
• In Australia telehealth could also save the lives of 1,300 people a year by enabling easy access to critical information that currently takes too long to retrieve.

Regulatory changes to telecoms and energy laws could use underutilised infrastructure for the delivery of these services. But, perhaps more importantly, regulatory changes to telecoms and energy laws could encourage a proactive regime by these asset-owners, to use their networks for the new services rather than the current closed network approach taken by these organisations.

Failure to implement national infrastructure plans forces government authorities to provide the services over expensive vertically-integrated networks, at great cost to the taxpayer.

Conclusions

In most countries there is no business case for overbuilding national infrastructure, either commercially or government-funded. Overbuilding results in too many underutilised assets and too much investment wastage, which makes such infrastructure investments economically unviable.

In most cases FttH networks will be a natural monopoly. At the same time, many national infrastructure applications will require end-to-end network control, at least for that part of the network used for applications such as healthcare, education and smart grids. Because of the monopolistic nature of the fibre infrastructure, and the fact that the national interest is at stake, there is a clear need for government leaders to facilitate these development through appropriate policies and regulations.

Here are the steps that we should take to address the issue:

- Understand and appreciate the status of the opportunity we have in relation to telehealth, e-learning, smart grids, and in relation to open national broadband networks;
- Have the political will across the Ministries/Departments of Broadband, Energy, Healthcare, Education, Climate Change and Energy to reap these benefits: W-o-G approach;
- Regulate to clear the way to make it happen;
- Create incentives to make it happen (eg, the $4.7 billion for the NBN in Australia and investments in IP-based intelligent electricity networks);
- Provide support and training to make asset-holders less fearful, more confident.

We have a unique opportunity in the telecoms infrastructure market to make the regulatory changes to achieve all of this. Interestingly, it is most probable that if the right regulations are put in place significantly less government funding will be required for the building of FttH networks.

To begin to move in the right direction it is far more important to get the right leadership from the government. Such leadership is required before these networks are built – let's get it right from the start. Sound infrastructure-based (structural) regulations based on open networks will also reduce the currently high level of regulations required for the services carried over this infrastructure.

Bucketty, August 2008