Australia - The National Broadband Network - Critical Considerations - DEIWG Discussion Paper

1. SYNOPSIS

The new broadband plan offers unprecedented opportunities for Australia. Not just in relation to telecommunications, broadband and the Internet but also for a range of new applications, most of which we can't even envisage as this point in time. This report addresses the enormous opportunities that this infrastructure – as a utility – has to offer and also addresses at a high level the essential issues that need to be addressed. A critical issue is that it needs to be judged as the infrastructure for the digital economy. To simply see this as an upgrade to ADSL broadband would be a grave mistake. A report on this will be presented to the Minister at an industry meeting on May 7th.

2. THE NATIONAL FTTH BROADBAND NETWORK

The decision from the government to invest $43 billion in a national open FttH broadband network is a clear indication that they believe broadband infrastructure is a collective good. This will be a wholesale network only, totally separated from the services that are going to be built on top of this infrastructure. With its trans-sector multiplier effect this open network delivers massive social and economic benefits. There is no other way – if you want to build a digital economy you need FttH, and for that to work it can only be built by a utility. Early indications that Telstra is going to co-operate are very promising.

A full analysis of this announcement can be found here:- *Australia - FttH based National Broadband Network*

The aim of this report is to go directly into the critical issues.

3. GOVERNANCE AND MANAGEMENT OF THE NBN/NBC

Our major concern here is that the magnitude of this project should not be underestimated. We also believe that, given the challenges that will have to be faced, we should make sure it is resourced with the top people from around the world.

There will be technical, financial and regulatory challenges, but these pale in comparison to the personnel challenge we will face if we don't get a team in place that can manage this project, with the capacity and the vision to operate in a trans-sector mode (across telecoms, energy, healthcare, education, media).

We sincerely hope that we won't adopt a parochial attitude – we need to get the best people in the world involved.

This team needs to establish a governance model for the National Broadband Corporation (NBC), and to appoint the key positions. It is critical that the organisation provides credibility and confidence as that will be essential for the success of the project.

This is also essential if we are to attract the right investors. Import is also to make sure that private (services) and public (infrastructure) interests are properly aligned; this has never be done in our industry on such a scale so the magnitude of that task alone can not be underestimated. Nevertheless, while finance is a most critical issue, the government should equally concentrate on the governance, business and management issues.

In this trans-sector project we also have an obligation to look, not just at connectivity, but also at sustainability. We need to build smart connected and sustainable communities. The fact that in Tasmania Aurora Energy is involved will allow us to look at smart grids. We need to multiply the FttH benefits and while there are many trans-sector opportunities, smart grid is a natural fit, at least in Tasmania, because of Aurora's involvement.

There are some good examples in Switzerland and Canada (Ottawa). It is essential that we use this once-in-a-lifetime opportunity to look at how this FttH grid can also operate to link in with distributed energy systems, especially in relation to wind and solar energy generated by individual people. The network can also be used to facilitate the management of the infrastructure needed for e-cars.

It would be a missed opportunity if our Department of Climate Change did not become involved and, for example, look at the world's foremost green commerce project in Ottawa to see how we can implement this in Tasmania, with the assistance of Aurora.

If we plan the infrastructure with these opportunities in mind it will involve very little extra expenditure, but if we try to do it later it will be at significant additional cost. At a minimum these kinds of activities need to be included in the planning so that they can easily be followed up at a later.

4. REGULATIONS - CRITICAL CONSIDERATIONS

With the open network approach the requisite regulatory changes will need to be formulated.

The leading examples are the Netherlands and Singapore and we need to tap into the work that has been done there, rather than trying the reinvent the wheel. Some good wholesale products are coming into the market, especially in the Netherlands and Britain.

The ACCC should take a leadership role – not just in the background but upfront – in bringing experts over to Australia to share their experience, ideas and suggestions with our own regulatory experts, who are among the best of the world. The ACCC should facilitate a focussed national discussion on this topic.

We also need to think through the retail model that will be linked to the infrastructure. The input of these users – all key players in the emerging digital economy (healthcare, energy, education, media as well as telcos and ISPs) - are essential before we start designing the infrastructure.

The Digital Economy Industry Work Group (DEIWG) discussed interconnections through so-called meet-me-points and these need to be further worked out, for both brownfield and greenfield. We can, and should, build on some of the work already done here.

There are other significant aspects of the Government's proposed interim (subject to convergence review in 2011) approach to regulation such as USO; Emergency Services and consumer protection measures (CSG, PA, NRF, price controls) which all warrant attention.

See also: *NGA principles from INTUG* on our special reports page:-
http://www.budde.com.au/presentations/Digital_Economy_Industry_Group.asp

5. WHOLESALE

In Australia we have learned a lot about the gaming tricks in the industry in relation to wholesale regulations. Whoever is going to build the new NBN (wholesale) business needs to know all those tricks, they needs to be able to stand up to their bullying, and needs to be passionate about doing it.

Within our industry we have some of the most proven and hardened resource to achieve the best outcome especially from companies who where at the time pumping out 'disruptive' customer-focused products and leveraging a buy versus build approach to infrastructure. We should tap into these people in order to create a level playing field and ensuring that the telco's to live or die based on how they innovate for their customers.....not on how they leverage their structural advantage.

6. TECHNOLOGY CRITICAL CONSIDERATION

A well-designed network will be able to support different applications in the future, including those not well supported by either today's "telecom" or "Internet", or even not conceived yet. The network should thus be provisioned at a as low layer as practical. The most important technological consideration should be that it is flexible.

In Australia we have some of the world's best technology experts and we should tap into their knowledge and their international networks to address issues such as PON technologies, point-to-point and point-to-multipoint network configuration.

GPON, EPON, and other shared media, are inflexible; they don't easily support separate physical-layer paths to different service providers. WDM-PON is a bit better, and lumped PONs are at least halfway there, but unlikely to do the trick in rural areas (if those are included). We should not try to do everything over "Ethernet" as if today's electronics were the answer for 10 years out.

It is critical that the network will be designed on the wholesale and retail requirements mentioned above. The network should certainly not be designed the other way around!

We also have the right suppliers here in Australia and we should tap into their expertise at a high level to get the framework right. Obviously beyond that it will become a competitive selection process, but in the first instance we should look at their combined expertise to point us in the right direction.

Australia is leading the world in wireless broadband and the expertise of our technology specialists will be critical in planning and designing the work that needs to be done for the most challenging 10% of Australians, those in regional and rural areas.

Within DEWIG these companies are represented and within the group we also have the structures in place to provide high-level advice along the lines mentioned above.

7. BASIC INFRASTRUCTURE

It is important to stress again that this NBN is about infrastructure - no different than electrifying or bringing clean water; it need not be complicated. Just because the government supplies electricity doesn't mean it needs to be able to manufacture every single electronic gadget on the planet nor does it mean they have to monetise what every single gadget does; just monetise the lowest common denominator - the simplest, least complicated, least controversial part - that might be dark fiber but could be conduit too - really doesn't matter too much - just as long as conduit is open all the way to the customer premises, the cost of getting there is negligible relative to value to the (digital) economy.

We should learn from some of the projects that have taken place in Tasmania in the last few years (for instance, BPL and FttH) regarding some of the very basic problems that will occur here.

As an example, in these projects it has become clear that not all electricity and telephone poles are suitable to have extra cable strung along them.

And most of the underground network of cables is not easily accessible for the underground deployment of the FttH network.

To avoid problems such as these, plus delays and cost blow-outs later on, it would be wise to investigate these issues upfront. Back in 2006 the DEIWG (at that time under the name Wholesale Industry Group) started a mapping project, and this could be a useful tool in pinpointing problem areas and planning and designing this national network.

It obviously makes a great deal of sense to utilise as much as possible of the existing infrastructure and in one way or another that needs to be brought into the NBC.

Most major construction companies are involved in DEIWG and Smart Grid Australia Inc and again the industry group can be used to come up with some high-level strategies.

As the government has indicated, this infrastructure will be essential for healthcare, education etc. As a consequence all homes will need to be connected as, by law or by custom, many of these essential services need to be available to everyone, not just to those who take up a commercial subscription. This element is causing a great deal of anxiety and discussion.

As we have seen in some of the European FttH rollouts penetration is far more important than ARPU to get the project off the ground. This will also significantly bring the residential access price down.

8. CO-DEVELOPMENT OF THE DIGITAL ECONOMY

Again stressing the importance the government has put on the NBN as the infrastructure of the digital economy it is essential that the government establish ASAP a trans-sector body to promote and assist in the development of applications for the digital economy.

It is great to have the infrastructure but we need it for the services. It would be foolish to spend $43bn on the infrastructure and nothing on strategies that will also see the developments of the applications. Most applications that will utilise this infrastructure are - at least in its essential format envisaged – but developing these applications requires structural changes to the silo systems of healthcare, education, climate change, energy, etc.

Even more worrying perhaps – especially within healthcare – are the internal silos. If these organisations are unable to develop trans-sector strategies we will end up with a large but highly underutilised infrastructure.

Based on some early work done by DEIWG in this respect there is a clear need for cross-sector government thinking. This is an essential issue that needs to be addressed by the government in parallel with the NBN infrastructure project.

Once this trans-sector approach becomes better understood by the government, other government policies need to be linked within the trans-sector context.

For example if we look at the costs that apply for a remotely located person to be linked to the network this could be considered very expensive. But if such a connection can keep a person out of hospital or out of a retirement village these connection costs become relatively insignificant. Within the overall cost of the NBN these costs are comparatively low. However, if left separate till the end the extra costs will become astronomical.

Experts have already indicated that if we do this cleverly – if we design the network in an intelligent way, and if we can maximise the use of existing infrastructure – a significant part of the $43bn can be used to develop the digital economy along the trans-sector lines mentioned above.

9. OTHER REPORTS

9.1 FROM DEIWG

Free Analysis - Australia - FttH Digital Economy Industry Group (PDF - 164KB)
An Industry Vision for the National Broadband Network Plan (v1.1 - PDF - 750KB)
An Industry Vision for the National Broadband Network Plan - Supplement (v5.0 - PDF - 1.22MB)
Fibre to the Future -- NBN Principles (PDF - 1.4MB)
2009 Submission DBCDE Strategies for the Digital Economy (PDF - 60KB)
FINAL DEIWG Submission for Digital Economy Future Directions to DBCDE (PDF - 520KB)

9.2 USA - REPORTS PRODUCED FOR THE OBAMA TRANSITION TEAM

Big Think Strategies - Open Access Policies (PDF - 176KB)
Big Think Strategies - Plans for the transition of the US telecoms industry (PDF - 84KB)
Big Think Strategies - Costings and open network issues in relation to FttH deployments (PDF - 76KB)
Big Think Strategies - Innovation networks:where e-science and telecoms meet (PDF - 44KB)

9.3 OTHER PAPERS

FttP Networks Topology and competition (PDF - 1MB)
The fundamentals of Fibre FROM the Home (PDF - 2MB)
The Seoul declaration for the future of the internet economy (PDF - 123KB)
FttH Global Rankings July 08 (Word - 753KB)
FttH Global Ranking Chart July 08 (PDF - 132KB)
NGA principles from INTUG (April 2009) (PDF - 16KB)

10. FTTH AND DIGITAL ECONOMY ROUNDTABLE, DINNER WITH SENATOR CONROY

Thursday 7 May 2009

10.1 THE INDUSTRY'S NATIONAL VISION FOR FTTH AND THE DIGITAL ECONOMY

Background

It is very pleasing to see that a range of the issues that we have been dealing with as an industry group have been addressed in the Government's new FttH plan – and that in some cases the government has actually delivered more than we asked for.

Back in 2006, as the Wholesale Industry Group, we asked for a backbone network. This year $250 million will be spent on this to fix black spots.

As an interesting side issue the Open Access Principles that we developed became an important focus in the open access policy of the Obama Team.

At the FttH Special Interest Group we argued against FttN and in favour of FttH, and some of the elements of the government's plan can be traced directly back to our report.

As the Digital Economy Working Group we shifted our focus to the benefits, particularly in relation to the multiplier effect, that FttH will be able to deliver in healthcare, education and energy savings, as well as digital media and the Internet.

Our government is among the best informed in the world. They actually do 'get it' and no other country outshines us.

And we most certainly helped to get the message across – not just to Minister Conroy but also to other Cabinet Ministers.

We met with the Minister on several occasions. He showed a genuine interest in our group and in our work, and has indicated that he is interested in meeting with us again.

Based on the latest developments I am finetuning the format for that meeting and I will keep you informed about that over the coming weeks.

If we can get this off the ground we will be transformed from global laggards to global leaders!

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0930 – 1000	Arrival and coffee

1000 – 1015	**Welcome and introduction of delegates**
1015 – 1045	**Analysis of the current situation** **Paul Budde**
10.45 – 11.05	**Regulatory Regime – considerations**
1105 – 1135	Morning coffee
1135 – 1155	**The National Broadband Corporation - considerations**
1155 – 1215	**FttH – Technical consideration** • PON environment • P2p and multipoints • GPON and EPON • Greenfields Stephen Davies GM Operations OptiComm
12.30 – 13.30	Light lunch
1330 – 1350	**Trans sector developments – e-applications** • Updates on meetings with Ministers Gillard and Roxon and the future action plan • Progress with Education • Update on Smart Grids • Problems with healthcare Chris Worrad, Managing Director, Consultel and chairman of the e-Applications Group
1350 – 1420	**Smart cities and smart homes** **Keynote** Allen Kearns, Deputy Chief, CSIRO Sustainable Ecosystems
On the go	Afternoon coffee
14.20 – 16.30	**Roundtable** Preparation of a statement for the Minister
16.30	Close Roundtable
18.00	Drinks
19.00	Dinner with Senator Stephen Conroy

Cost: $675 per person (excluding GST)
              This includes morning coffee, lunch, afternoon tea and drinks and dinner

Venue: The Observatory Hotel, 89-113 Kent Street, Sydney

Booking: Telephone: 02 4998 8144
              Email: pbc@budde.com.au

Roundtable only: $450
Dinner only (if seats are available): $275
                              (excluding GST)

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