Chapter 4

Deployment

Introduction

4.1 Discussions in chapter 2 touched on the fact that the government has been non-prescriptive in how the $4.7 billion will be allocated once the successful bidder is announced. It has also been discussed that the government has stated that the Request for Proposals (RFP) was specifically non-prescriptive to facilitate optimal flexibility in the network design by prospective bidders. Also described previously is the particular concern expressed to this committee that, given the significant commitment of taxpayers' money, the government must ensure that those public monies provide maximum benefit to ***all*** taxpayers throughout Australia.

4.2 The RFP states that the footprint of the National Broadband Network (NBN) is to cover 98 per cent of Australian homes and business premises. Chapter 2 has also discussed the fact that the government has again been non-prescriptive as to how it will measure the ability of each bidder to meet that objective, and also in the geographic location of the 98 per cent footprint. There is great concern that not requiring proponents to cover a stated geographic area will allow bidders to select the areas that would prove most commercially viable for them, which automatically de-selects remote areas and black spots that are currently underserved or receive no broadband service at all.

4.3 Real concerns regarding the 98 per cent footprint have been expressed right across the industry, by state governments and by individuals alike. The most logical assumption is that the 98 per cent will be measured purely on the basis of population density. It is subsequently apparent that those states with large geographic areas and sparse populations will be most disadvantaged, despite the fact that many of those remote areas generate significant economic activity and wealth for Australia. As stated by the Western Australia Chamber of Commerce and Industry:

> CCI is concerned that the NBN will have limited coverage in Western Australia based on the Commonwealth's target to cover 98 percent of the Australian population and WA's large land mass and sparse population.[1]

4.4 The Queensland Government calls on the Commonwealth to undertake a consultative approach with all states and territories in order to determine where the footprint will lie:

> A key issue for Queensland is the 2% of Australian homes and businesses that will not receive access to the NBN. … [I]t is considered that use of a

1 Western Australia Chamber of Commerce and Industry, *Submission 17*, p. 5.

> national statistic could adversely impact states, such as Queensland, that have a more dispersed population.
>
> The Australian Government must collaborate with the states to agree on the location of homes and businesses that will benefit from the NBN. …
>
> …the Queensland Government does not wish the NBN 98% threshold to be allocated in Queensland purely on a population density basis.[2]

4.5 When giving evidence at the Perth public hearing, the Western Australia Department of Industry and Resources (WA DOIR) expressed concern that although Western Australia (WA) was approximately one third of Australia's total area, because WA's population was only 10 per cent of the nation's population, theoretically a bid could exclude all underserved areas of WA and still fulfil the RFP requirement of reaching 98 per cent of homes and businesses:

> …there is no clear definition of 'NBN' [footprint]. The NBN has a target of 98 per cent of the Australian population, of which WA consists of approximately 10 per cent … living in one-third of the geographic area of Australia. Our perception of the NBN is that it covers only areas where there is high potential for revenue and where there are existing broadband services already. WA's under-serviced area risks becoming the two per cent casualty of the NBN.[3]

4.6 If the government were to base the footprint on population densities, given that the timeframe for reaching the 98 per cent is five years, this translates to those people in regional and remote areas that are already disadvantaged having to wait another five years or more (depending on the contract signing date) before they can access the NBN. Vodafone draws the conclusion that:

> The government's investment should be directed solely to the roll out of broadband networks in areas where it would not otherwise be economic to do so …[4]

4.7 These comments necessitate an examination of how the NBN will be deployed; however, again this critical factor has not been outlined in the RFP, but left up to each potential bidder to determine, leaving the nation virtually in the dark on this issue until after the contract is signed.

Roll-in rather than roll-out

4.8 The discussion of this issue led a number of submitters and witnesses to request that the government consider carefully its deployment schedule for the NBN.

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2 Queensland Government, *Submission to the Australian Government on Policy and Funding Initiatives to provide Enhanced Broadband to Rural and Remote Areas*, pp 4 and 6.

3 Mr Anson Cheng, Manager, Broadband Infrastructure, Western Australia Department of Industry and Resources (WA DOIR), *Committee Hansard*, Perth, 6 November 2008, p. 2.

4 Vodafone, *Submission 9*, p. 8.

4.9 One of the major players in the RFP process is Terria, which has stated a preference for how they believe the NBN should be deployed; it is assumed that this will be reflected in their proposal to the government:

> The NBN provides an opportunity to schedule the deployment of the new infrastructure in such a way that those consumers currently without broadband, are the focus for the initial deployment. …
>
> 'Rolling-in' the NBN starting with currently under-serviced areas will clearly reduce the gap between the broadband 'haves' and 'have-nots'. … Areas currently suffering a complete absence of service or from the presence of 'black spots' would receive early attention under a 'roll-in' approach.[5]

4.10 Digital Tasmania identified the schedule for deployment as one of their key issues in their submission, commenting it is necessary to ensure that:

> Historically underserved regional and rural areas, including Tasmania are some of the first to receive the benefits of an NBN rollout.[6]

4.11 In Sydney the committee heard from Mr Hicks of Adam Internet, who stated his concern on the issue from a South Australian perspective:

> I find it a little strange that we are looking at disadvantaging quite a large segment of South Australia when that money could be used to roll forward, so to speak, from the country back to Adelaide. … That then puts broadband where it is needed the most, and that is to the people who do not have it.[7]

4.12 As one of Australia's largest Internet Service Providers (ISPs), iiNet restates that those areas currently underserved should be the first to benefit from the government funding:

> An 'outside-in' deployment of service [should be implemented] starting with areas and customers currently without service. This includes non-metropolitan customers as well as that in 'broadband black-spots'.[8]

4.13 At the Brisbane hearing, a witness for Indigenous Remote Communications Australia (IRCA) also advocated that the deployment should be rolled-in:

> Definitely start in the remote areas. You could have maximum impact on the failed state of remote Australia if you were able to roll out broadband to those areas.[9]

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5 Terria, *Submission 12*, p. 8.

6 Digital Tasmania, *Submission 18*, p. 3.

7 Mr Gregory Hicks, Chairman of the Adelaide ISP, Adam Internet, *Committee Hansard*, Sydney, 7 October 2008, p. 42.

8 iiNet, *Submission 3*, 'Regulatory Submission On the requirements for an Open Access National Broadband Network', June 2008, p. 6.

4.14 Another Brisbane witness from the Torres Shire Council gave their unequivocal backing to the concept of rolling-in the NBN from remote areas such as their shire:

> Yes, I would back that 150 per cent … especially here in the Torres Strait…[10]

4.15 Mayor Stephen went on to explain that many people living in the shire, and also entering the shire from international waters, use their mobile telephone to access the internet as their lifeline when they are travelling to the shire by sea. However, mobile service is very unreliable in the shire. Mayor Stephen elaborated on an emergency situation that occurred earlier in the year that illustrated his point:

> In terms of getting a response from the emergency services … out to the community which is only about 170 nautical miles north of Thursday Island, it took over 48 hours to actually respond to that [emergency]. … [B]ecause the mobile phone system was actually down they could not get any contact whether by land line or a message back to Thursday Island…. It gives constituents a false understanding because they just jump in their tinnies and expect to actually have access by the internet.[11]

4.16 The weight of evidence is increased by comments from Primus Telecom, which also calls for the government to roll-in rather than roll-out the NBN:

> Any deployment should initially be prioritised to target areas that do not achieve these speeds [12 Mbps]. … Broadband poor areas should be rectified ahead of everything else, and this must be one of the key objectives and considerations of the NBN.[12]

4.17 Another telco, AAPT made identical comments in their submission as they discussed their suggestions for a possible transition path for the NBN:

> AAPT submits that the construct of the NBN should be to firstly provide services to currently under-served areas. That is, the network should be constructed on the basis of 'rolling-in' infrastructure from areas with low speed broadband towards areas which currently have higher speed broadband. …
>
> Such a roll-in will best serve the interests of consumers who are most disadvantaged with respect to access to higher speed broadband …[13]

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9 Ms Linda Chellew, Manager, Indigenous Remote Communications Australia (IRCA), *Committee Hansard*, Brisbane, 21 November 2008, p. 6.

10 Councillor Pedro Stephen, Mayor, Torres Shire Council, *Committee Hansard*, Brisbane, 21 November 2008, p. 14.

11 Councillor Stephen, *Committee Hansard* Brisbane, 21 November 2008, p. 15.

12 Primus Telecom, *Submission 20*, pp 7-8.

13 AAPT, *Submission 4*, p. 7.

4.18 In their evidence to the committee, WA DOIR acknowledges the RFP requirement for proponents to show a return on their investment, and makes the logical conclusion that business cases will be focused on areas that display greatest commercial viability.[14] This theme was also picked up by other submitters including AUSTAR, who further explained their views at the Sydney public hearing:

> …the RFP did not dictate one way or the other [whether it would be rolled] in or out. So somebody is preparing a business case and putting forward a tender on the basis that, to roll their funding through, they want to start generating the revenues and taking those revenues to help fund the push-out.[15]

4.19 Ms Weir continued that this would be a logical and legitimate business decision and make for a sound business model on which to base a proposal; however because the government did not specify the deployment schedule, no-one will know, including the government, on which deployment model proponents have based their bids until the successful bidder is selected and contract details announced.

4.20 In her evidence at the Sydney hearing, Ms Teresa Corbin said that the government funding should not only be targeted on underserviced geographic areas, but also on underserviced groups within the community:

> …we do have the opinion that the underserviced areas, as far as both specific customer groups and geographic location are concerned, have to be targeted with government funding to ensure that they do get the services.[16]

4.21 Later in her evidence Ms Corbin reiterated the need to ensure that the NBN is deployed to remote areas first:

> I cannot urge strongly enough that some of those remote and regional areas that are not getting internet at the moment are the ones that should be prioritised. They should not have to wait five years, because they already do not have access.[17]

4.22 Although the government has stated that the two per cent of Australians not covered by the NBN would be assisted in gaining access through the Australian Broadband Guarantee (ABG), a number of people have commented that previous funding efforts of successive governments, including the ABG, have not provided consistent or sustainable results:

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14 Mr Cheng, WA DOIR, *Committee Hansard*, Perth, 6 November 2008, p. 2.

15 Ms Deanne Weir, Group Director, Corporate Development and Legal Affairs, AUSTAR United Communications, *Committee Hansard,* Sydney, 7 October 2008, p. 18.

16 Ms Corbin, Consumers Telecommunications Network, *Committee Hansard,* Sydney, 7 October 2008, p. 73.

17 Ms Corbin, Consumers Telecommunications Network, *Committee Hansard,* Sydney, 7 October 2008, p. 76.

> It is important to understand that rural and remote end users have seen a number of Funding Programs start, stop and change over the last few years. **Whatever solution is developed … needs to be long-term, sustainable and relevant to rural and remote areas**.[18][bolding copied]

4.23 South Australia (SA) provided a detailed submission to the Regional Telecommunications Review, commenting on the adequacy of existing funding programs to facilitate services for rural and remote areas of the state. The submission notes that while subsidies such as those provided under the ABG are welcome, the programs do not necessarily meet community needs:

> The Australian Broadband Guarantee program while welcome is overly restrictive and complicated and saddled with the same inherent flaws (such as shirt term homes being ineligible) as earlier subsidy programs.[19]

4.24 The submission summarises issues faced by SA's remote Indigenous communities, explaining the reasons why there is still a lack of access to computers and limited capacity to use digital technology, due in part to the lack of continuity of previous funding programs:

> Aboriginal communities require programs which identify and empower community champions, and provide on-going funding …[20]

4.25 At the Brisbane hearing, evidence was heard from representatives of Electronic Frontiers Australia (EFA) on the issue of how the $4.7 billion should be allocated:

> Certainly $4.7 billion could do a lot to help internet access in rural and remote areas that genuinely do need it. Perhaps it could be targeted at them rather than a one-size-fits-all approach.[21]

4.26 The committee therefore considers that, rather than the government relying on ad hoc funding programs to prop up the provision of what is now seen as an essential service, a more effective solution would be to ensure that the deployment of the NBN is mandated from the underserved areas as the first priority. This translates to the infrastructure being rolled-***IN*** from those areas currently underserved or unserved, with areas with current access having the broadband infrastructure deployed last.

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18 Australian Telecommunications Users Group, *Submission 7*, p. 4.

19 South Australian Government, *Submission to the Regional Telecommunications Independent Review Committee (RTIRC)*, December 2008, Attachment 1, p. 8.

20 South Australian Government, *Submission to the Regional Telecommunications Independent Review Committee (RTIRC)*, December 2008, Attachment 1, p. 11.

21 Mr Dale Clapperton, Spokesperson, Electronic Frontiers Australia, *Committee Hansard*, Brisbane, 21 November 2008, p. 37.

Technology to be deployed

4.27 One issue that the government has been prescriptive on within the RFP document is the technology on which the network should be based. Objective five within the RFP states that the National Broadband Network should 'use[s] fibre-to-the-node or fibre-to-the-premises network architecture'.[22]

4.28 The committee has heard from a number of people that this is one area where proponents *should* have been given greater flexibility. Professor Joshua Gans asks the question, 'Should we be relying on fibre?' He answers his own question by stating that 'This strikes me as too restrictive a prescription'.[23]

4.29 Professor Gans continues by discussing the four main technology platforms currently available for the provision of the NBN, being copper, cable, wireless and fibre. However, noting that wireless speed capabilities are generally in excess of those attainable using fibre, Professor Gans acknowledges that wireless has limitations. Although fibre may be technologically superior to wireless, Professor Gans comments that '…given the savings in the cost of a new roll-out, they can be economically superior to fibre'.[24]

4.30 The increasing convergence of the technology platforms is then highlighted, noting that the implications for the NBN build are that it must enable the interoperability of these platforms. This seems to imply that, due to the newness of this convergence, and of fibre itself, the potentials have yet to be fully explored, and consequently '…by being prescriptive, we deny ourselves the possibility of finding out'.[25]

4.31 At the public hearing in Sydney, the criticism of the RFP being too technology-prescriptive was echoed by Mr Gregory Hicks from Adam Internet, when he stated that:

> We should be looking at fibre to the home … Most of the world is doing that. We are looking at a stopgap … when in fact we should be looking at something like fibre to the home from day one...[26]

4.32 At the Brisbane hearing, Dr Kelso highlighted the concerns expressed in his submission, stating that, if not carefully engineered to be upgradeable to fibre-to-the-premises (FTTP), it would be a backward step for Australia:

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22 DBCDE, *Request for Proposals to Roll-out and Operate a National Broadband Network for Australia*, 11 April 2008, paragraph 1.3.1.5, p. 5.

23 Professor Joshua Gans, *Submission 15*, p. 2.

24 Professor Joshua Gans, *Submission 15*, p. 2.

25 *Submission 15*, p. 2.

26 Mr Hicks, Adam Internet, *Committee Hansard*, Sydney, 7 October 2008, p. 48.

> I am particularly concerned about the prescription of fibre-to-the-node technology for the national broadband network. I believe that, if it is to be prescribed as fibre to the node and nothing more, it is a retrograde step. … if we move down the path of the network being engineered for fibre to the node where it makes it difficult for it to go beyond that to fibre to the home, it is a retrograde step.[27]

4.33 Dr Kelso went on to explain that it is not the actual fibre that is the limiting factor, as fibre has no limitations on bandwidth capacity, rather '…the technology in the nodal point and the copper pairs that run from there are potentially a bottleneck'.[28]

4.34 According to Dr Kelso if we continue down this path and the government does not address this new potential bottleneck, the Australian telecommunications industry will be in a very similar position in ten years' time to the one it finds itself in today.

4.35 Another advocate for not prescribing the technology for the NBN was Mr Paul Budde, although his comments were also directed at the requirement of reaching 98 per cent of Australian homes and businesses. Mr Budde states that it is quite feasible to attempt a footprint of 91-93 per cent when building a fibre-to-the-node (FTTN) network, however to attempt reaching 98 per cent 'is silly':

> The government should not fall into the trap of legislating technology. … The government should legislate the outcomes, not the technology you do it with.[29]

4.36 A notable comment on the technology prescription was from the Electronic Frontiers Australia submission. Their concluding paragraph discussed the likely pricing structure that would result from a FTTN build, stating that many customers who already access high speed broadband may well be worse off under the NBN, or be unable to afford the higher speeds. Their submission subsequently concluded that 'The benefits of a FTTN network do not, in our view, outweigh the costs, and a FTTN network should not proceed for that reason'.[30]

4.37 iiNet also stated that they do not believe the current proposal should go ahead. In their evidence at the Perth hearing, they commented on this several times, for example, '…no, I do not believe that the proposed NBN solution is the right solution for Australia. That is my honest opinion'.[31]

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27 Dr Ross Kelso, *Committee Hansard,* Brisbane, 21 November 2008, pp 20-21.

28 Dr Kelso, *Committee Hansard,* Brisbane, 21 November 2008, p. 21.

29 Mr Paul Budde, Paul Budde Communication, *Committee Hansard,* Sydney, 7 October 2008, p. 84.

30 Electronic Frontiers Australia, *Submission 23*, p. 4.

31 Mr Michael Malone, Managing Director, iiNet, *Committee Hansard,* Perth, 6 November 2008, p. 25.

4.38 iiNet also provided an alternative view point in their submission with an attachment titled 'The Myth of Fibre'. After completing studies of their own customers in a number of urban areas they have concluded that 'The immediate need for an FTTN network is a myth'.[32]

4.39 Their research shows that iiNet customers are routinely accessing 6 Mbps every day on their network, which uses the existing copper network and the DSLAMs[33] installed by iiNet at the local exchanges. iiNet also states that these speeds are obtainable at distances greater than 1.5 km from the exchanges:

> These customers are not connected over a fibre network, nor are they located within 1.5km from the telephone exchange. Rather they are connecting via the copper Customer Access Network (CAN) that has been used on an 'as is' basis … just customers using plug and play components and iiNet ADSL.[34]

4.40 However, there is a known quality factor with the copper network, and in particular the CAN areas that have aging copper infrastructure. 'The major point with the quality of speed is the loss of signal over distance, which is exacerbated by poor-quality copper.'[35]

4.41 In addition, the existence of pair-gain copper wiring is another inhibitor of access to broadband if the existing copper were to be relied upon, even for a short period. However, iiNet's research has illustrated that existing CANs could be utilised in the short term while a 'better' solution for the NBN was devised.

4.42 The committee heard from Mr Arthur Price, the Chairman of Axia NetMedia, which has revealed itself as a proponent for the NBN. Axia has deployed fibre networks in Alberta, Canada, as well as in France, and is part of the consortium that will deploy the new fibre network in Singapore. Axia NetMedia has also revealed itself as a proponent for the NBN.

4.43 Mr Price stated that fibre is definitely the best option for any new network, qualifying this statement by adding that the fibre needs to be high quality to support all that Next Generation services would demand of it:

> The best modern topography is a fibre based network. If you create a fibre based grid and put on that fibre based grid only IP layer compatible technology … and use digital technology, then you have a network that can haul digital traffic of any kind for any purpose … in any direction in real time.[36]

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32 iiNet, *Submission 3*, 'The Myth of Fibre', p. 15.

33 Digital Subscriber Line Access Multiplexer (DSLAM)

34 *Submission 3*, 'The Myth of Fibre', p. 4.

35 Mr Malone, iiNet, *Committee Hansard*, Perth, 6 November 2008, p. 20.

36 Mr Price, Axia NetMedia, *Committee Hansard*, Canberra, 24 November 2008, p. 2.

4.44 Mr Price went on to state that 'Of course, fibre is best because it has no complications; it just has a high fixed cost.'[37]

4.45 Most submissions and witnesses have agreed that the greatest cost in creating the NBN will be in the deployment of the fibre backhaul. However, Mr Price later qualified his reference to high cost when he was questioned about the huge distances that would need to be covered in Australia:

> You can extend fibre way more than people think: it is not as costly a technology as people think.[38] …
>
> I would say [huge distance] is probably not near a big a challenge as you think.[39]

4.46 Mr Price did seem to agree with the EFA, who had stated that FTTN was not the most ideal solution. In commenting on the method of deployment that Axia have used in all three networks, Mr Price said that their objective was to create what he called a fibre 'community interconnect grid':

> The community interconnect grid connects every community in Alberta to the global gateways in Calgary and Edmonton. …
>
> If you do these kind of community interconnect networks, then the community internet fibre grid can level the playing field on distance and distance dislocation.[40]

4.47 Although agreeing that fibre was the best technology to use, Mr Price did specify that Axia had not deployed an FTTN solution:

> The reason fibre to the node is not on [Axia's] list is it is simply not a functional alternative. From a competitive landscape point of view, it is not a functional alternative. The only person fibre to node works for is the guy that owns the local loop and the guy that owns the backhaul. … The reason they have [FTTN] is because they have got a lot of money hanging on those copper loops. … Since it has such poor performance, the way to defend it is to get fibre closer to the premise so the copper loop is not as poor performing. But it only works for the incumbent.[41]

Do we need a <u>national</u> solution?

4.48 Another prescriptive factor is within the very name of the NBN, which dictates that the government is calling for a *national* network. Many submissions

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37 Mr Price, Axia NetMedia, *Committee Hansard,* Canberra, 24 November 2008, p. 13.

38 Mr Price, Axia NetMedia, *Committee Hansard,* Canberra, 24 November 2008, p.13.

39 Mr Price, Axia NetMedia, *Committee Hansard,* Canberra, 24 November 2008, p. 14.

40 Mr Price, Axia NetMedia, *Committee Hansard,* Canberra, 24 November 2008, p. 4.

41 Mr Price, Axia NetMedia, *Committee Hansard,* Canberra, 24 November 2008, pp 16-17.

were based on the assumption that, because the NBN has the word 'national' in the title, this necessarily requires that there must be only one network provider.

4.49 Professor Gans from Melbourne examined the term 'national', and provided his own interpretation. Professor Gans highlights that there is no such requirement within the RFP, which specifically allows for bidders to propose a state-based solution. However, he does query why the economic unit used by the government was 'state' rather than allow, for example, a local area solution.

4.50 In his submission, Professor Gans referred to a 2006 report he wrote, in which he argues that:

> …local areas have particular needs for which tailoring might be desirable. They also have different cost structures in deploying new technologies. All this might warrant a more disaggregated approach …[42]

4.51 The question is also raised in Professor Gans' submission as to whether high speed broadband is actually needed by 98 per cent of Australian homes and businesses. Comment has already been noted that many people only use the internet for email, which does not require high speed broadband. Professor Gans notes also that, because some businesses or even individuals may require high speed broadband, this does not translate to requiring the availability of that high speed capacity for every location nationally.[43]

4.52 Given the vastness and diversity of the Australian landscape, and the sparse distribution and diverse needs of Australia's population, the committee heard that a one-size-fits-all approach will not provide an optimal solution:

> Given the vast density and topographical differences between metropolitan and regional Australia, adopting a single, national technology approach is not the most effective solution and is unlikely to be sustainable over the longer term. It is critical that regional Australia has access to metro equivalent services and prices … [a]nd these services should be provided with fit-for-purpose network solutions …[44]

4.53 When giving evidence at the Canberra hearing, Mr Price explained that his company, Axia NetMedia, strives to push the fibre out as close as possible to the premises, but uses wireless where deployment of fibre is impractical, also stressing the need for wireless to be of high quality:

> The only wireless links in Alberta are carrier grade wireless … It is microwave wireless and is typically where you actually could not implement fibre for some geographical reason.[45]

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42 Professor Joshua Gans, *Submission 15*, p. 1.

43 *Submission 15*, p. 1.

44 AUSTAR United Telecommunications, *Submission 16*, p. 9.

45 Mr Price, Axia NetMedia, *Committee Hansard*, Canberra, 24 November 2008. p. 13.

4.54 This comment aligns with Professor Gans' call for there to be local solutions that will enable convergence of technologies. Mr Price also seems to intimate Axia's preference for fibre-to-the-premises wherever possible, which is the solution they will deploy in Singapore.

Conclusion

4.55 The committee believes that the requirement in the RFP for the NBN design to be based on a FTTN or FTTP platform should be broadened to enable a greater level of technology convergence where this is more appropriate than fibre.

Planning for transition

4.56 The prospect of compulsorily moving all Australians, including domestic, government and business customers, from the current technologies to a mandated new technological platform is a daunting concept and will require detailed and considered planning. Suggestions have been made for the government to carefully consider suggested migration plans, although the committee acknowledges that any transition plan will be very dependent on the nature of the roll-out (or roll-in), the technology platform to be utilised and whether the solution incorporates state-based proposals.

4.57 The committee heard a number of times concerns from existing service providers regarding the prospect of having their assets 'stranded' at the local exchange. These companies have made significant investment in their own DSLAM infrastructure, which has been housed in the local exchanges that are owned by Telstra. The nature of a FTTN solution would see fibre bypassing the exchange and extending directly to the nodes, which will apparently number in the tens of thousands, with the customer access network connecting directly to the fibre in the local node. As there will no longer be a need for these DSLAMS, which will consequently become 'stranded assets', the issue of compensation also arises for those companies who have made those outlays. There is also a possibility of customers being stranded without access to any services.

4.58 The answers lie in a thoughtful transition plan, regardless of the technology platforms used or the reach of the solution. Adam Internet is one such organisation that stands to have their significant assets stranded at the exchange, but has made suggestions for how to minimise the impact. This would particularly be the case if there was no transition, but rather an overnight 'cutover' to the new network.

4.59 At the hearing in Sydney, Mr Gregory Hicks from Adam Internet stated his concerns due to the way Telstra currently mishandles the migration of his customers when Adam Internet gains access to a new exchange:

> We cannot even do a single exchange correctly, let alone the whole of Australia, so logically that says that it would be a fairly slow and long procedure to have people migrate from their existing infrastructures.[46]

4.60 He adds that there is not just the technology to consider, there is a human factor to consider also, which can be at times less predictable and/or reliable:

> …there are an awful lot of customers who have to have their database physically changed and their records moved. There is a hard wire. There is human intervention. Every time somebody changes one of those, you end up with the possibility of standing customers as well. … [T]here needs to be an organised migration path over a four- or five-year period.[47]

4.61 Mr Hicks also believed that there should be a 'no disadvantage test' in the migration plan, which should also include a no-change option. This would allow customers who can currently access speeds of greater than 12 Mbps at prices that may be lower than the NBN prices to remain with their current service provider for the extent of the transition or migration period. He continued that:

> …there would have to be a migration period, so that we all agree that, whether [the migration period] is five years or seven years, everyone will be on the new network in, say seven years time. The option of changing is up to the customer at any time in that seven years. … It would be a managed migration.[48]

4.62 It logically follows that if there is a managed migration or transition plan over a number of years, companies with stranded assets could use that period to gradually depreciate those assets and retire them in a commercially viable manner, thus removing any need for compensation payments.

4.63 iiNet has also specified their belief that a migration plan is required, stating that 'Transitional arrangements are essential and should be aimed at meeting public policy objectives rather than shoring up anti-competitive structures.[49]

4.64 iiNet prefers that there is a provision for compensation of any stranded assets, not just for service providers but also for customers. 'A managed migration away from stranded assets must be available. Stranding must not be at the whim of the network operator or owner.'[50]

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46 Mr Hicks, Adam Internet, *Committee Hansard,* Sydney, 7 October 2008, p. 44.

47 Mr Hicks, Adam Internet, *Committee Hansard,* Sydney, 7 October 2008, pp 44-45.

48 Mr Hicks, Adam Internet, *Committee Hansard,* Sydney, 7 October 2008, p. 45.

49 iiNet, *Submission 3*, 'Regulatory Submission On the requirements for an Open Access National Broadband Network', June 2008, p. 6.

50 iiNet, *Submission 3*, 'Regulatory Submission On the requirements for an Open Access National Broadband Network', June 2008, p. 14.

4.65 Other principles that iiNet would like incorporated into a transition plan include a 'no disadvantage test', and that migration to an NBN should not be enforced prior to five years from the commencement of the NBN in a given area.

4.66 Dr Kelso discussed the issue of stranded assets from a slightly different perspective at the Brisbane hearing, stating that:

> …if we have a true open access regime through fibre to the node or preferrably fibre to the home, the matter of stranded assets should not be an issue. … [I]f you have true open access, there really are no stranded assets, because those competitors can then simply move into the new regime.[51]

4.67 Dr Kelso went on to explain that, even if the new regime was not truly open access in nature, and assets were stranded at the exchange, he believed that the majority of these assets would have already been 'written off' in taxation terms:

> Typically, this gear has an economic life of only 18 months or so; so they may or may not agree with that. … in tax terms, it is typically written off.[52]

Improved planning and building coordination across jurisdictions

4.68 A critical issue raised with the committee in relation to the transition planning was to ensure that there was a greater degree of coordination and cooperation between the three tiers of government, and also between all tiers of government and private enterprises. In discussing examples of where better coordination had delivered improved outcomes for the community, Mr Anson Cheng of the WA DIOR stated that:

> There is a need for effective coordination between communities, government and industry to ensure that efficient and effective sustainable service delivery mechanisms are established. There is also a need for a high level of commitment and coordination across all levels of government.[53]

4.69 In fact, several Perth witnesses raised the issue of allowing greater involvement and coordination of local, state and Commonwealth governments in the planning and deployment of the NBN. This may well be due to the vast land area of WA, and perhaps also due to the surge in building and infrastructure growth during the recent years of economic growth following the mining and resource boom in the state. Mr Frontino, the Managing Director of the private company, CipherTel, made the following observation:

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51 Dr Kelso, *Committee Hansard*, Brisbane, 21 November 2008, pp 27-28.

52 Dr Kelso, *Committee Hansard*, Brisbane, 21 November 2008, p. 28.

53 Mr Cheng, *Committee Hansard*, Perth, 6 November 2008, p. 2.

> I think it is important that local government does get involved, that town planning or planning infrastructure gets involved, and that the infrastructure for these services is planned for well in advance, before the roads go down and before the bridges are built. … It could hugely minimise the cost to put fibre in at this point of time versus putting it in two years down the track when the price could be 10 to 15 times higher.[54]

4.70 Mr Peter Monks, Chief Executive Officer of the Perth City Council, also drew attention to the need for coordinated planning as one of four key issues in the deployment of the NBN:

> The fourth and final point essentially is to improve the way that telecommunications infrastructure is rolled out. This last point could easily be forgotten when dealing with the higher level technological components of any new network. However, local governments throughout Australia, and especially within capital cities, have had many frustrations with telecommunication companies installing their infrastructure over many years.[55]

4.71 Mr Monks provided photographic examples of where multiple pit lid covers provide a patch-worked footpath, adding that, 'Some parts of the city streets in Perth contain more pit lid covers than paving slabs.'[56] These covers are ad hoc in design, do not comply with local specifications; in addition street trees are being killed by cabling work, subsequently cannot be removed because of that cabling work, and for similar reasons, new trees cannot be planted. As the underlying cause for this mayhem of the streetscape, Mr Monks explained that 'The Telecommunications Act exempts much of these works as being minor works,' later adding that 'if [any structure] is lower than 600 millimetres, you could get away without a planning approval.'[57]

4.72 Professor Trevor Green spoke at length about the need for improved coordination of infrastructure planning and in particular the economic efficiencies that this coordination can deliver:

> …there is a severe lack of state planning or local government planning in how and where telecom networks should look. We have … new residential estates in Perth that are being built. They are not putting in the conduits and the pipes and the infrastructure to have fibre to the home, simply because the backhaul from that estate [to Perth] does not exist. …

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54 Mr Anthony Frontino, Managing Director, CipherTel, *Committee Hansard*, Perth, 6 November 2008, p. 72.

55 Mr Peter Monk, Chief Executive Officer, City of Perth, *Committee Hansard*, Perth, 6 November 2008, p. 75.

56 Mr Monk, *Committee Hansard*, Perth, 6 November 2008, p. 75.

57 Mr Monk, *Committee Hansard*, Perth, 6 November 2008, p. 79.

> State and Federal governments should in fact be mandating, for new estates or greenfield estates, that provision for the fibre infrastructure should be made.[58]

4.73 Professor Green then described the recently completed Perth to Mandurah rail line as an example of where improved coordination has provided immediate improvement in outcomes:

> …where state planning has … been lucky is in terms of the Perth to Mandurah railway line. … I … proposed … or motivated to get the conduit next to that railway line. Putting the fibre in there is having an impact on broadband …[59]

4.74 The committee proceeded to ask Professor Green what would currently prohibit local governments or state governments from requiring that land developers install appropriate telecommunications infrastructure. Professor Green's response indicates that what is required is a change of attitude by governments, which is underpinned by a change in legislation:

> They have been very well trained, educated and browbeaten into believing that telecommunications is not their part of the infrastructure provisions, that it is the responsibility of the carriers only. … I have an ongoing battle with the shires [to] say, 'No, you can do it,' but, every time, they get told by the state planning authority, 'No, it's not part of the core planning.' This is where I believe the federal government and certainly the state governments should in fact be putting it out that telecommunications, along with roads, the electricity, the sewerage … are now part of the infrastructure that needs to be provided with a plot. At the moment, telecommunications is not within the act … We need to get the state governments to actually put in the act that, for any new properties that get developed, provision of telecommunications infrastructure needs to be in place.[60]

4.75 Professor Green extended this view to also call for each state to have a telecommunications plan that identifies future development areas, their infrastructure requirements, and include as a minimum the laying of conduits for fibre deployment to that development, and for there to be 'some kind of regulatory and legal support'[61] to ensure it occurs:

> The attitude that telecommunications legislation or telecommunications is only a federal issue needs to be changed … The federal government is not there to do the local state planning.[62]

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58 Professor Trevor Green, *Committee Hansard*, Perth, 6 November 2008, pp. 55-56.

59 Professor Green, *Committee Hansard*, Perth, 6 November 2008, p. 56.

60 Professor Green, *Committee Hansard*, Perth, 6 November 2008, p. 58.

61 Professor Green, *Committee Hansard*, Perth, 6 November 2008, p. 58.

62 Professor Green, *Committee Hansard*, Perth, 6 November 2008, p. 58.

Conclusion

4.76 The committee acknowledges the complexity of the deployment of the NBN. However, the committee concludes that the most effective use of this substantial expenditure would be to ensure that those Australian homes and businesses that are currently most disadvantaged should be prioritised for initial deployment of the NBN. That is, areas that are currently underserved or unserved should have broadband deployed first, with infrastructure subsequently rolled-***IN*** towards the cities from those underserved areas, which are generally in regional, rural and remote communities.

4.77 The committee concludes that the best model for planning the deployment schedule would incorporate high levels of coordination and ongoing involvement by local and state governments with the Commonwealth Government. This would also provide assurance of support through appropriate regulatory changes within each tier of government.

4.78 The committee also concludes that there needs to be a carefully considered transition plan to migrate both existing service providers and their customers to the new network over the five year period specified in the RFP. The aim of this transition would be to ensure that it occurs seamlessly, with a no disadvantage test over the five years and that it minimises the issue of stranded assets and stranded customers.

Closing remarks

4.79 The committee has endeavoured to provide a condensed synopsis of issues that it believes are critical to the decision-making process that will be undertaken over the coming eight week period by the ACCC, the Expert Panel, the department and ultimately the minister. Consequently the committee particularly draws the attention of those decision-makers to the list of conclusions made within the report, which can be found on page xix.

4.80 The final report by this committee, to be tabled on 30 March 2009, will examine the remaining terms of reference in more detail.

Senator Mary Jo Fisher

Chair

Date: December 2008