Chapter Six

Commercial viability

Introduction

6.1 This chapter will examine the government's commitment to the NBN being a commercially viable operation. Relevant issues include the level of demand that is required and its relationship to service pricing.

6.2 Pursuant to this, the predicted estimated costings for the NBN will be outlined, together with the basis on which those costings were made. Claims that productivity increases will result from the NBN will also be examined, as will the contentious issue of conducting a cost benefit analysis for this massive spending of tax payers' funds.

The foundation promises

6.3 Shortly after being elected in November 2007, the Rudd Government made a commitment to the nation that it would:

> …provide funding of up to $4.7 billion, and consider the necessary regulatory changes, to facilitate the roll-out of a new open access, high-speed, fibre-based broadband network, providing downlink speeds of at least 12 megabits per second to 98 per cent of Australian homes and businesses.[1]

6.4 Following the termination of the RFP fibre-to-the-node (FTTN) process in April 2009, this commitment suddenly ballooned into the current promise that the Australian Government would build a fibre-to-the-premise (FTTP) NBN. This build will be conducted in partnership with the private sector in what is claimed to be the single largest nation building infrastructure project in Australia's history.

6.5 The current commitment by the government is that the NBN will:

- Connect 90 percent of all Australian homes, schools and workplaces with broadband services with speeds up to 100 megabits per second, 100 times faster than those currently used by many households and businesses;
- Connect all other premises in Australia with next generation wireless and satellite technologies that will deliver broadband speeds of 12 megabits per second; and

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1 http://www.archive.dbcde.gov.au/2009/april/national_broadband_network, accessed 3 November 2009.

- Directly support up to 25,000 local jobs every year, on average, over the 8 year life of the project.[2]

6.6 Further, the government stated that the NBN was to be 'built and operated on a commercial basis'[3] by a company established specifically for this purpose, the company now known as NBN Co.

6.7 The government has committed that 'every house, school and business in Australia will get affordable fast broadband.'[4] However, the cost of this new broadband promise is nearly ten times the previous commitment, with the government anticipating it will now require an investment of up to $43 billion over the eight year period that the NBN build is expected to take.[5]

Cost – benefit analysis

6.8 The expenditure of any substantial amount of public funding needs to be justified transparently to the Australian taxpayer. This is usually undertaken in the form of a robust and rigorous cost-benefit analysis, which is generally a component of the government's business case that is routinely prepared prior to embarking on a major project.

6.9 When the government embarked upon its nation building infrastructure project, a new agency called Infrastructure Australia was created to facilitate the analysis and the prioritisation of proposed major infrastructure projects. In its first report to government in December 2008, Infrastructure Australia stated that it had:

> …adopted a new national approach to infrastructure decision making … [which] uses a robust framework. …
>
> Infrastructure Australia has rigorously applied this framework.[6]

6.10 The framework has seven stages through which infrastructure projects were to be analysed, which are as follows:

(i) Goal identification;

(ii) Problem identification;

(iii) Problem assessment;

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2 http://www.minister.dbcde.gov.au/media/media_releases/2009/022, accessed 3 November 2009.

3 http://www.minister.dbcde.gov.au/media/media_releases/2009/022, accessed 3 November 2009.

4 http://www.minister.dbcde.gov.au/media/media_releases/2009/022, accessed 3 November 2009.

5 http://www.minister.dbcde.gov.au/media/media_releases/2009/022, accessed 3 November 2009.

6 *A Report to the Council of Australian Governments*, December 2008, p. 6.

(iv) Problem analysis;

(v) Option generation;

(vi) Solution assessment; and

(vii) Solution prioritisation.[7]

6.11 The detailed explanation within Stage 6 of the framework, the 'Solution assessment', lists the following requirements for action within that stage:

> Use of cost-benefit analysis to assess those options/solutions. … **Accurate and justifiable Cost-Benefit Analysis [CBA] has been used to appraise options. CBA is comprehensive** and includes wider economic and social impacts.[8] (bolding added)

6.12 It is clear from this that the government's intention was that all proposals for infrastructure projects of national significance were to be validated through the application of this assessment framework, which included the requirement of an 'accurate and justifiable' cost-benefit analysis that was to be 'comprehensive' in nature.

6.13 In addition, Infrastructure Australia was required to assess infrastructure proposals that were to be funded from the Building Australia Fund (BAF) according to a set of BAF evaluation criteria and principles. Those criteria can be found on Infrastructure Australia's website, along with an Explanatory Statement that cites:

> Pursuant to s. 52(2) [of the *Nation-Building Funds Act 2008*], the Infrastructure Minister must not recommend payments from the BAF unless Infrastructure Australia has advised the Infrastructure Minister that the payment satisfies the BAF Evaluation Criteria.
>
> Similar arrangements apply under s. 52 to advice from Infrastructure Australia … through the Infrastructure Minister, to the Minister for Broadband, Communications and the Digital Economy…[9]

6.14 The BAF Evaluation Criterion 2 relates to the '[E]xtent to which proposals are well justified with evidence and data', with the first part of that criterion stating:

> a) Proposals should demonstrate through a cost-benefit analysis that the proposal represents good value for money.[10]

6.15 The committee reminds the government that a lack of 'value for money' was the supporting principle used by the government to terminate the previous FTTN RFP process.

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7 *A Report to the Council of Australian Governments*, December 2008, p. 10.

8 *A Report to the Council of Australian Governments*, December 2008, p. 10.

9 Explanatory Statement: BAF Evaluation Criteria, accessed 3 November 2009 at: http://www.infrastructureaustralia.gov.au/publications.aspx

10 Explanatory Statement: BAF Evaluation Criteria, accessed 3 November 2009 at: http://www.infrastructureaustralia.gov.au/publications.aspx

6.16 The government has made no attempt to justify its decision to push ahead with this major infrastructure project without undertaking a cost-benefit analysis; this was also the case with the previous FTTN NBN proposal. When Minister Conroy was closely questioned at Senate Estimates in October 2008 whether there would be any cost-benefit analysis of the FTTN proposal, the Minister was adamant:

> This is an election commitment, and we will deliver our election commitment. …
>
> We are going to deliver on our election commitment. … No ifs, no buts; it will be delivered.[11]

6.17 The Senate Standing Committee on Environment Communications and the Arts (the ECA committee) sought confirmation that the funding was to come from the BAF, yet was to be exempt from the BAF Evaluation Criteria, to which the minister replied:

> We could not be clearer. … This will not be subject to Building Australia Fund processes. This is a separate election commitment.[12]

6.18 The committee is appalled that, at the time of reporting, almost eight months after the announcement of the commitment to a massive investment of $43 billion for the FTTP NBN, the government still refuses to comply with its own legislative requirements that the NBN must undergo a rigorous cost-benefit analysis.

Stakeholder opinions regarding CBA requirement

Implementation Study?

6.19 The report has discussed in chapter 3 the broad scope of the multi-disciplinary Implementation Study being undertaken by the Lead Advisor into all aspects of the NBN roll-out. It would be logical to include a cost-benefit analysis within the broad scope of this study. Despite the comprehensive list of inclusions within that study, (see paragraph 3.17), most conspicuous by its absence is a cost-benefit analysis of the project.

6.20 It was clearly anticipated by several witnesses that a cost-benefit analysis would be part of the Implementation Study. Mr Sameer Chopra stated at the public hearing in Canberra that;

> It is my understanding that [a cost-benefit analysis] would probably occur as the NBN implementation study group comes together, but I have not seen any cost-benefit analysis at this stage.[13]

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11 Minister Conroy, Senate Estimates, Standing Committee on Environment, Communications and the Arts (ECA Committee), *Committee Hansard*, 20 October 2008, p. 28.

12 Minister Conroy, ECA Committee Senate Estimates, *Committee Hansard*, 20 October 2008, p. 28.

13 Mr Sameer Chopra, Deutsche Bank, *Committee Hansard*, Canberra, 20 July 2009, p. 81.

6.21 The committee asked a telecommunications and media analyst at this hearing whether it would be 'prudent' to undertake a cost-benefit analysis for the NBN, to which the response was:

> We absolutely do. With an investment of $43 billion, whichever way you look at it and whichever way you structure it in terms of debt equity funding, it makes sense to perform a rigorous cost-benefit analysis.[14]

An assessment framework

6.22 Another witness made the comment that a cost-benefit analysis was just one of a 'dashboard' of assessment tools available to the government, also anticipating this to occur within the Implementation Study:

> It is one of a range of measures that governments can use to assess the attractiveness of particular projects. It is obviously important that projects have a reasonable cost-benefit analysis … irrespective. Clearly, there is more detail which will come out through the implementation study about the costs and benefits of this project and we look forward to seeing them.[15]

6.23 The Productivity Commission held the view that conducting a cost-benefit analysis was not the only way of assessing the viability of a major project. Mr Bernard Wonder explained at the Canberra hearing in October:

> Desirably, cost-benefit analysis can be used as a tool to inform decision making. Different cost-benefit assessments will present different challenges. Sometimes they are more straightforward that other times: for example, where there is less uncertainty in what the benefits and costs flows are.
>
> …It is not only cost-benefit analysis, I might add, that will give you that information – there may be other analyses that are being conducted … but a cost-benefit analysis is one framework that you can enter all of these things into.[16]

6.24 The submission provided by the Productivity Commission went into considerable detail about using a cost-benefit analysis as a framework, highlighting the fact that any such analysis is only as good as the data available to feed into the framework. The submission noted that:

> The precise nature of the benefits and cost which should feed into the analysis will depend on the specific features of the project.[17]

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14 Mr Daniel Blair, Southern Cross Equities, *Committee Hansard*, Canberra, 20 July 2009, p. 85.

15 Mr Brendan Lyon, Infrastructure Partnerships Australia, *Committee Hansard*, Canberra, 20 July 2009, p. 21.

16 Mr Bernard Wonder, Productivity Commission, *Committee Hansard*, Canberra, 1 October 2009, pp 25-26.

17 Productivity Commission, *Submission* 87, p. 3.

6.25 The Productivity Commission points to the government's *Best Practice Regulation Handbook* (2007) which recommends:

> …costs and benefits, including money equivalents based on willingness to pay, should be discounted using a real rate with appropriate sensitivity analysis.[18]

6.26 A social discount rate of seven per cent is recommended by the handbook, with sensitivity testing between three and eleven per cent.[19] The Productivity Commission believes that:

> …uncertain future costs and benefits should be estimated in terms of the risk-weighted averages (expected values) of all possible outcomes … That is, uncertainty of costs and benefits should be addressed in the valuation of the costs and benefits rather than used to vary the appropriate discount rate.[20]

6.27 The issue of the uncertainty of both the costs and particularly the benefits is very pertinent to the NBN, a fact pointed out by the Productivity Commission:

> The use of expected values of costs and benefits is relevant to the NBN, as uncertainties of the evolution of technologies and consumer demand mean no single estimate for each of the future costs or benefits can be proposed with certainty.[21]

6.28 The submission acknowledges the difficulties around conducting a cost-benefit analysis for the NBN, highlighting the complexities of 'forming appropriate estimates of the expected values of costs and benefits.'[22] Further emphasising this point, the Productivity Commission submitted that:

> …cost-benefit analysis is a tool whose results are no better than the systemic way in which it is used and the quality of data it elicits or estimates – its value lies principally in it being appropriately used to fairly assess the relevant costs and benefits of a project.[23]

6.29 The committee acknowledges these difficulties. However, the committee strongly believes that this should not excuse the government from their responsibility to assess the 'value for money' of this project by conducting a cost-benefit analysis.

6.30 The submission provided by the Productivity Commission suggested that one way to overcome much of this uncertainty is to conduct pilot trials, with the objective of gathering information that may not otherwise be revealed. Consequently, pilots can

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18 Productivity Commission, *Submission* 87, p. 4.

19 Productivity Commission, *Submission* 87, p. 4.

20 Productivity Commission, *Submission* 87, pp 4-5.

21 Productivity Commission, *Submission* 87, p. 5.

22 Productivity Commission, *Submission* 87, p. 6.

23 Productivity Commission, *Submission* 87, p. 4.

be 'useful insurance policies'[24] for the government. Noting that the government has selected Tasmania as the first phase of the national roll-out, and also that the first priority regions have been selected for the Regional Backbone Blackspots, the submission suggests that information from these 'pilots' could provide valuable input into the framework of a cost-benefit analysis.

6.31 The committee views this as sound advice, but believes the suggested approach of awaiting results from pilots could see the timeframe for implementation of the NBN blow out considerably. However, the committee also recognises that the additional time taken would be a relatively inexpensive 'insurance policy' when measured against the $43 billion investment at risk.

6.32 One organisation that remains highly critical of the government's refusal to undertake a cost-benefit analysis is the Business Council of Australia (BCA). The written submission provided by BCA attached their submission to the government regarding regulatory reform options.

6.33 Although supportive of the NBN proposal, BCA's submission to this inquiry noted that the government's decision to create the NBN Co was:

> …a significant departure from past policy approaches in the ICT sector and the market-led approach to broadband investment favoured by the OECD. The proposal is therefore not without some risk and… the BCA contends that further analysis of the [NBN FTTP] proposal is warranted.[25]

6.34 BCA supported this call for further analysis citing recent advice to governments by the OECD that 'policy makers must evaluate the costs and benefits of any government investment in communication infrastructure.'[26] The submission stated further that:

> Consistent with this advice and with international best practice, the government should provide publicly and in full a cost-benefit analysis that also sets out the investment case for the planned roll-out …
>
> Rigorous cost-benefit analysis needs to be an in-built part of all spending decisions … The government needs to remain committed to having Infrastructure Australia audit the likely benefits of major infrastructure projects and ensuring the transparency of policy advice.[27]

6.35 Attention was drawn to the lack of publicly available information about the government's policy intentions, which presumably will be entailed in the Implementation Study. Highlighting the need to fill this information vacuum, BCA

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24 Productivity Commission, *Submission* 87, p. 6.

25 Business Council of Australia (BCA), *Submission* 52, p. 3.

26 BCA, *Submission* 52, p.3.

27 BCA, *Submission* 52, p.3

cautioned that until the government's intentions are more fully detailed, 'much potential current and future investment [in broadband take-up] could be held back.'[28]

6.36 The submission by BCA to the government's discussion paper on regulatory reform further elaborated on these issues, again emphasising the need for the Implementation Study to be completed expediently. The submission made a number of high level recommendations, two of which were directly relevant:

- The government should make the completion of the NBN implementation study a high priority and avoid upholding potential investment, both within and outside the NBN, due to bureaucratic delay or regulatory uncertainty.
- A thorough cost-benefit analysis on the NBN proposal should be made publicly available, to ensure that the approach that has been proposed has a net benefit for the Australian economy and to underpin confidence in investment.[29]

6.37 The committee fully supports this call to the government to ensure that the Implementation Study is completed expediently and that a thorough cost-benefit analysis is conducted, with the outcomes of both of these to be available for public scrutiny.

Existing analysis[30]

6.38 At the time of reporting, there had been only one academic attempt to conduct a structured cost-benefit analysis. This was presented by economists Professor Henry Ergas and his associate, Professor Alex Robson at a Productivity Commission roundtable on evidence-based policy.

6.39 The telling conclusion of this detailed analysis was that the overall costs of the NBN will far outweigh any benefits by between $14-20 billion. This is a staggering claim that surely must ring alarm bells for the government.

6.40 Professor Ergas and Professor Robson are both previously from Concept Economics. Their analysis compares the likely costs of connecting those within the 90 percent footprint of the FTTP network with the counterfactual cost of upgrading the existing HFC and copper assets. The latter scenario is similar to the government's previous FTTN proposal, but with higher speeds of 30-40 Mbps and enabling wireless broadband in regional areas of up to 30 Mbps. The economists estimate that the cost to build the FTTP NBN would be around three times the cost of the counterfactual.

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28 BCA, *Submission* 52, p.4

29 BCA, *Submission to DBCDE on Regulatory Reform for 21st-Century Broadband*, p.4.

30 This section includes observations made by and through *Communications Day*, 2-4 September 2009.

6.41 The analysis of the benefits was based on the likely increase in the consumer's willingness to pay for the increased speed offered by the NBN FTTP. This willingness to pay is then mapped over a 20 year period (life span assumed for the FTTP), allowing for increases in income and the development of future applications that could drive demand. Professor Ergas explained the analysis as follows:

> Our cost-benefit analysis is based on the bottom-up approach, …the way that works is that we assume a rate of growth in the willingness to pay and then we assume that the willingness to pay for higher speeds increases more rapidly than the willingness to pay for lower speeds. …
>
> We then value the benefits in that way. That is an absolutely conventional way of doing this sort of exercise for new goods. We then use that valuation to compare it to the schedule of costs and that then gives you the comparison between the costs and benefits…[31]

6.42 The paper suggested that the NBN would take longer than eight years to build and that consequently any flow-on benefits would be delayed. Also questioned was the government's claim that eHealth applications development will surge.

6.43 The authors were critical of a number of assumptions made by the government that were fundamental to the development of the current NBN policy. One criticism was the government's claim that the NBN would result in an increase in productivity after 10 years of 1.1 per cent. The authors stated their belief that this was incorrectly based on the change in productivity resulting from there being no broadband available, whereas most Australian consumers already have some form of broadband.

6.44 There is also an admission within the paper that the option of delaying the project was not costed. However, the authors are quoted as suggesting that:

> This option is likely to have high value, particularly if it is accompanied by regulatory reform that addresses the current disincentives to invest.[32]

6.45 The authors conclude that if the costs of the NBN outweigh the benefits by more than $17 billion, the project should not proceed. As Professor Ergas stated at the Canberra hearing:

> What it shows to my mind is that you need to do this kind of analysis because otherwise it is impossible to take rational decisions.[33]

6.46 Since the publication of this paper, there have been some criticisms of the overall outcome arrived at by the authors, their assumptions and the fact that they advocate a counterfactual that is similar to the now terminated FTTN proposal.

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31 Mr Henry Ergas, *Committee Hansard*, Canberra, 1 October 2009, p. 43.

32 Australian Financial Review, Wednesday, 2 September 2009, p. 3.

33 Mr Henry Ergas, *Committee Hansard*, Canberra, 1 October 2009, p. 44.

6.47 The committee believes that this criticism only serves to emphasise the need for the government to take the lead, undertaking a robust cost-benefit analysis that makes use of all the information that only the government has available to it through the ongoing Implementation Study.

Government position

6.48 The committee sought advice from the Department of Broadband, Communications and the Digital Economy (the Department) on whether a cost-benefit analysis was planned for the NBN. The Department reiterated the Minister's claim that the implementation of the NBN 'is the government's commitment' and continued that:

> There will certainly be an independent, multidisciplinary set of commercial, technical and legal advice.[34]

6.49 However, this apparently will not include a cost-benefit analysis.

6.50 The Department of Finance and Deregulation (DoFD) played a significant role in determining that the FTTP proposal should proceed. When questioned about how DoFD determined the costing estimates for the proposal for the FTTP network, it was explained that:

> Our costing exercise was entirely related to the cost of building or acquiring a network. It was not a business study or a cost-benefit study or a business case analysis. …
>
> In terms of advice on cost and benefit, certainly we have given advice to the minister in relation to those matters on NBN Co., but a full cost benefit analysis was not done as part of the period leading up to the [April 2009] announcements by the government.[35]

6.51 Officers from the Treasury were also questioned in relation to the costing exercise, and in particular whether Treasury would normally be asked to conduct a cost-benefit analysis of a major project proposal as part of its advice to government. Treasury responded:

> We would not. …a formal cost-benefit analysis has not been undertaken.[36]

6.52 However, Mr Murray did attempt to explain this response in the ensuing discussion. Although there may be some benefits that would be readily identified, such as increased capital stock, and clear economic benefits from increases in productivity, he said other benefits would be less obvious, including those resulting from improved competition and greater network coverage:

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34 Mr Colin Lyons, DBCDE, *Committee Hansard*, 20 July 2009, p. 99.

35 Mr Simon Lewis, DoFD, *Committee Hansard*, Canberra, 1 October 2009, p. 90.

36 Mr Richard Murray, Department of the Treasury, *Committee Hansard*, Canberra, 1 October 2009, p. 12.

> …there are likely to be significant spin-off benefits of this. … Those spin-off benefits are very difficult to quantify.[37]

6.53 The committee was troubled to hear Finance Minister the Hon Lindsay Tanner seem to concede that a cost-benefit analysis would be too hard, due to the high level of uncertainties that exist:

> …cost-benefit analyses are only as good as the assumptions you feed into them and it is hard to make assumptions about applications and services that will only be imagined and marketised in a high-speed [NBN] environment.[38]

6.54 Again, the committee remains highly critical of the dismissive attitude taken by the government that such uncertainties justify tossing a cost-benefit analysis into the 'Too Hard' basket.

Minority lack of concern

6.55 Conversely there were a number of key stakeholders who stated that they were not overly concerned that there would be no cost-benefit analysis of the NBN project. Some pointed to historical examples of large national infrastructure projects that would most likely not have gone ahead if approval was dependent on a rigorous cost-benefit analysis. For example, Mr Maha Krishnapillai from Optus explained:

> …if Sir John Monash in Victoria in 1920s and 1930s had to do a full economic cost-benefit analysis in terms of rolling electricity out to regional Victoria it would have failed and would not have gone ahead on the basis of why would you rollout electricity to replace a whole lot of candles and gas lights.[39]

6.56 At the Communications Day Congress in Melbourne during October, the issue was the topic of a panel discussion that 'revealed pronounced industry ambivalence on the subject'.[40] Mr Greg Muller Managing Director of Bullseye was quoted as saying that the delay caused by insisting on a cost-benefit analysis:

> …could be more harmful that the project itself – leaving Australia exposed to increased competition from other countries proceeding with their own fibre builds. …
>
> If we're going to be sustainable as an economy and as a society into the future, we need access and we need speed …[which] are fundamental needs for our society as part of our growth … failing to implement [the NBN] is

37 Mr Murray, Department of the Treasury, *Committee Hansard*, Canberra, 1 October 2009, p. 12.

38 *Communications Day*, 21 September 2009, p. 6.

39 Mr Maha Krishnapillai, Optus, *Committee Hansard*, Sydney, 5 August 2009, p. 45.

40 *Communications Day*, 16 October 2009, p. 3.

> only going to constrain us and constrain our business in much bigger ways than $43 billion.[41]

6.57 There was a consensus in that panel that, due to the high level of unknowns, particularly regarding future innovative applications that may be a consequence of the NBN, concern for the cost-benefit analysis was possibly over-stated. Examples of present and future applications and uses for the NBN are featured in chapter seven.

6.58 The committee acknowledges that there will be innovations that evolve in an NBN environment. However, the committee strongly disagrees with the reliance on policies based on a 'build it and they will come' mentality, which the committee believes is a poor substitute for a rigorous and publicly disclosed cost-benefit analysis.

Commercial viability

6.59 As noted in the introduction to this chapter, the government has committed to ensuring that the NBN Co operates as a 'commercially viable' Government Business Enterprise (GBE). This will be a necessary pre-requisite for the government to be able fulfil its subsequent commitment to sell down its share in the NBN Co five years after the network is fully operational. However, in stating this desired outcome, the government has yet to define how it will measure the 'commercial viability' of the NBN Co, which adds to the list of uncertainties upon which this proposal is based.

An applicable definition

6.60 One definition of commercial viability was provided in a report to the New Zealand Government as it sought to restructure its energy sector in 1998. The report cited several criteria for determining whether the newly separated entities would be commercially viable. The New Zealand scenario has parallels to the situation currently facing the Australian telecommunications industry. The criteria to determine that the entities were commercially viable included that the entity was:

- able to survive (operate without going into liquidation or requiring financial support from its shareholders) under all reasonably foreseeable market and operating circumstances; and
- projected in most reasonably foreseeable market and operating conditions, including all probable market outcomes, to provide enough positive free cash flow and net profit after tax to enable it to:
    - compete effectively in the wholesale [telecommunications] market;
    - have funds to reinvest in the [telecommunications] sector;
    - provide acceptable returns to its shareholders; and
    - borrow from the private sector on comparative terms.[42]

41 *Communications Day,* 16 October 2009, p. 3.

6.61 The sensitivity to unfavourable variations in demand and different pricing strategies was also taken into consideration.[43]

6.62 Due to the strong similarities of the New Zealand restructuring scenario to the establishment of the NBN Co, the remainder of this chapter will use this definition as a useful benchmark for further examination of the 'commercial viability' of the NBN Co.

Timeframe?

6.63 The committee draws attention to another critical parameter that has not been defined, being the timeframe within which the NBN Co must attain commercial viability. Although there has been no definite period of time over which the NBN Co would be expected to prove commercial viability, there was a hint by the Executive Chair of the NBN Co when he commented that:

> I would certainly not exclude the possibility of providing a return on the investment over the longer term.[44]

6.64 Of course, this still leaves Australia guessing exactly what is meant by 'over the longer term.'

The cost

6.65 According the above definition of commercial viability, the NBN Co will need to earn a return sufficient to cover the cost of the build before it can generate 'positive free cash flow and net profit after tax' and be able to provide 'acceptable returns to shareholders.'

6.66 The government has said that up to $43 billion dollars would be invested to build a fully operational, wholesale only, national network. The project will be undertaken as a joint investment, with government hoping to attract significant investment from the private sector. This poses the question: what will be the actual cost to tax payers?

Government response

6.67 The government has been questioned closely about the $43 billion investment and what portion of that is to be the responsibility of the Australian taxpayer.

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42 Energy Reform Transition Unit, *Final Certification Report*, Chapter 3, 21 November 2005, accessed on 4 November 2009 at: http://www.med.govt.nz/templates/MultipageDocumentPage____5412.aspx.

43 Energy Reform Transition Unit, *Final Certification Report*, Chapter 3, 21 November 2005, accessed on 4 November 2009 at: http://www.med.govt.nz/templates/MultipageDocumentPage____5412.aspx.

44 Mr Michael Quigley, NBN Co, ECA Committee Senate Estimates, *Committee Hansard*, 19 October 2009, p. 74.

6.68 At Budget Estimates in May 2009, the Minister gave a detailed opening statement in which he noted that '…the total funding of the network will be no more than $43 billion.' The minister further explained that:

> With respect to the total cost I should make clear that advice to government identified a cost range of $38 billion to $43 billion … no-one has seriously suggested that these figures are an underestimate. I note that even the analyst Ian Martin stated in a recent report that the government's proposed NBN company could roll out a passive optical network based on FTTP … to 90 per cent of households for less than $20 billion to $25 billion. Indeed we expect the actual cost to be significantly lower than $43 billion for a number of reasons, including the substantial contingency intentionally built into the estimate.[45]

Lower estimates

6.69 The Minister's admission that the NBN could cost almost half the stated $43 billion was supported in evidence to the committee some months later. Mr Arthur Price, CEO of Axia NetMedia Corporation, outlined his cost estimates to the committee, stating that the greatest proportion of the cost to build the NBN would be in connecting individual premises to fibre. This would:

> …have much more of a resources logistical challenge. We think the fibre-to-the-premises component of this is about two-thirds to three-quarters of the [total] capital.[46]

6.70 Mr Price believed that the way that this was managed in the network built by Axia in both France and in Alberta, Canada, was to complete the build in two stages. The regional backhaul (Axia's 'community interconnect grid') was deployed first and communities connected once they had backhaul provided to their closest regional centre.[47] Mr Price believed that the NBN in Australia would not cost $43 billion, stating that:

> The fibre-to-the-premise part would be in the range of $20 billion. The community interconnect grid [regional backhaul] – the rest – is in the range of let us say $5 billion to $7 billion.[48]

6.71 Mr Price later reiterated that the build should cost 'around $27 billion and less than $30 billion.'[49]

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45 Minster Conroy, Budget Estimates, Environment, Communications and the Arts, *Committee Hansard*, Canberra, 26 May 2009, p. 50.

46 Mr Arthur Price, Axia NetMedia Corporation, *Committee Hansard*, Sydney, 5 August 2009, p 15.

47 Mr Price, Axia NetMedia Corporation, *Committee Hansard*, Sydney, 5 August 2009, p 15.

48 Mr Price, Axia NetMedia Corporation, *Committee Hansard*, Sydney, 5 August 2009, p 15.

49 Mr Price, Axia NetMedia Corporation, *Committee Hansard*, Sydney, 5 August 2009, p 16.

$43 billion under the microscope

6.72 The committee questioned officers from the Department of the Treasury when they appeared at the Canberra public hearing during October 2009. Mr Richard Murray reiterated that it was not the government's intention that it would need to provide the entire $43 billion; rather, 49 per cent of that would come from the private sector over the eight-year building period. Mr Murray continued that:

> The assumption has been made that the other 51 per cent [provided by the government] would have around a 50-50 debt-equity ratio. … That leaves you with an equity funding by the government of about $11 billion. Not all of that is going to be spent over the forward estimates, but we have in the budget numbers enough to cover the government's equity investment over the next four years.[50]

6.73 However, when the government was pressed to confirm it would only need to come up with that 51 per cent, the minister admitted that:

> We said we would be the 100 per cent if necessary.[51]

6.74 The amount of $11 billion was then further clarified in response to another question on notice:

> The figures … indicate that the Government borrowing to fund its equity contribution to the National Broadband Network might be of the order of $8.6 billion (comprising an $11 billion equity contribution less the $2.4 billion from the Building Australia Fund), not all of which would be required over the forward estimates. An addition of $8.6 billion to the borrowing program, spread over (say) four years, would represent an increase of only $2.15 billion per annum. An adjustment of this magnitude would be very manageable.[52]

6.75 The government has committed to providing an initial investment of $4.7 billion, which includes:

> $4.45 billion for an equity injection for the company that will build and operate the network and an investment in the early rollout of the fibre-based network in Tasmania.[53]

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50 Mr Richard Murray, Department of the Treasury, *Committee Hansard*, Canberra, 1 October 2009, p. 5.

51 Minster Conroy, Budget Estimates, Environment, Communications and the Arts, *Committee Hansard*, Canberra, 26 May 2009, p. 79.

52 Department of Treasury, Answers to Questions on Notice, 1 October 2009, http://www.aph.gov.au/Senate/committee/broadband_ctte/answers_qon/091001_Treasury.pdf, p. 7.

53 Department of Treasury, Answers to Questions on Notice, 1 October 2009, http://www.aph.gov.au/Senate/committee/broadband_ctte/answers_qon/091001_Treasury.pdf, p. 10.

6.76 This $4.7 billion comprises $2.4 billion from the Building Australia Fund; the remaining $2.3 billion is to be provided through the future issuance of Aussie Infrastructure Bonds. Further discussion about the issuing of bonds can be found in chapter five.

Wholesale only entity

6.77 Even if the overall cost of the NBN is less than $43 billion, the major limiting factor to commercial viability is that NBN Co will only provide wholesale services to access seekers. Basically, NBN Co can only sell access to the fibre, and that will generally be to telecommunications retailers, at least in the formative years. It is common knowledge that the major commercial value is in the retail service arena, in which the NBN Co cannot participate.

6.78 If the NBN Co is to be commercially viable, it follows that the prices it charges for access to the wholesale services must ensure that the NBN Co can meet the minimum criteria listed in paragraph 6.60 above. Critical among those criteria is the ability to provide sufficient positive cash flow to enable reinvestment in the sector and also provide acceptable returns to its shareholders.

6.79 To assess the ability to generate positive cash flow, a basic requirement would be a sound understanding of the cost of building a fully operational NBN. Due to the current lack of information regarding the technical build and consequently the overall cost of the NBN, prices that have been suggested to date by analysts and telecommunications companies can only be regarded as speculation. Again, details within the Implementation Study will hopefully enable more precise calculations.

The relationship between demand and pricing

Is there demand for high-speed broadband?

6.80 The demand for broadband services across Australia is increasing, according to the June 2009 statistics from the Australian Bureau of Statistics (ABS) on Internet Activity. Comparisons to June 2008 data show a continuing upward trend in broadband connections and a corresponding decrease in dial-up connections. [54]

6.81 An interesting figure is that there still remain over one million dial-up subscribers out of a total of 8.4 million internet subscribers.[55] Almost 13 per cent of Australian internet subscribers are currently not connected to broadband services. This is a significant statistic that the government must consider as a possible limitation to achieving commercial viability of the new network.

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54 http://www.abs.gov.au/AUSSTATS/abs@.nsf/ProductsbyReleaseDate/6445F12663006B83CA256A150079564D?OpenDocument, accessed 6 November 2009.

55 http://www.abs.gov.au/AUSSTATS/abs@.nsf/ProductsbyReleaseDate/6445F12663006B83CA256A150079564D?OpenDocument, accessed 6 November 2009.

6.82 Subscription to Digital Subscriber Line (DSL) continued to comprise the greatest proportion of non-dial-up connections; however this figure fell from 63 per cent in December 2008 to 57 per cent in June 2009.[56]

6.83 What is most notable is the staggering ongoing growth in wireless broadband connections, which now represent around 47 per cent of the DSL subscription. In June 2009, there were just over two million wireless subscribers, with over 1.9 million of these being mobile subscriptions. This equates to an increase of over 51 per cent in wireless subscriptions over the previous six months.[57]

6.84 This figure would no doubt be even higher, as the ABS site states that the figure of two million does not include internet connections via a mobile phone device.[58] Given the ever increasing use of handheld devices by a progressively more mobile workforce, added to by the popularity of new smart phones, such as the iPhone, the committee suggests that this figure should be markedly higher.

6.85 Some of these statistics should be examined at more than just face value. In fact the increasing prevalence of wireless broadband connections raises serious doubts over the need for fibre to 90 per cent of Australian premises.

6.86 The ABS statistics also document the increasing appetite among Australians for higher download speeds, with 57 per cent of internet users now subscribing to download speeds of 1.5Mbps or greater, up from 51 per cent in December 2008. However, another telling aspect to the ABS report was that the demand for the highest speed connections of above 24 Mbps remained steady at 5 per cent over the last six months.

6.87 This indicates that the increase in demand for speed is limited to the lower end of the speed range, hence questioning the requirement of the government's move from the RFP proposal speed of 12 Mbps. Mr Kevin Morgan was one witness that raised this point directly with the committee when he suggested the government needed to provide affordable broadband, not just to the individual consumer but to 'society at large.' Mr Morgan pointed out that the current UK proposal for broadband is for 2 Mbps as a national goal, suggesting that for Australia:

> …it might be more realistic to perhaps go back to the 12 megabits as the baseline. That would be adequate for most applications that any domestic user would want. …

56 http://www.abs.gov.au/AUSSTATS/abs@.nsf/ProductsbyReleaseDate/6445F12663006B83CA256A150079564D?OpenDocument, accessed 6 November 2009.

57 http://www.abs.gov.au/AUSSTATS/abs@.nsf/ProductsbyReleaseDate/6445F12663006B83CA256A150079564D?OpenDocument, accessed 6 November 2009.

58 http://www.abs.gov.au/AUSSTATS/abs@.nsf/ProductsbyReleaseDate/6445F12663006B83CA256A150079564D?OpenDocument, accessed 6 November 2009.

> So 100 megabits is definitely gold plating and perhaps not necessary.[59]

6.88 In Canberra the committee heard from Mr Daniel Blair from Southern Cross Equities, who agreed that there was not the demand for 100 Mbps, in fact he believed that '[t]here is not that propensity of demand for [even] 12 megabits per second.'[60] He later continued that:

> In our view there is not a demand for 100 megabits per second. [But] if you offer someone something for free they will probably take it up. …
>
> It is pretty hard to see how you are going to use 100 megabits per second today.[61]

6.89 Mr Blair stated quite firmly that the FTTP network would not be economically viable, partly due to the lack of demand in two areas:

> …we believe there is limited demand from consumers – firstly for the speeds being proposed and, secondly, a low propensity by consumers to pay above what they do today.[62]

6.90 On this basis, Mr Blair believed that the NBN would not be attractive to potential investors, and that in fact, 'I would not be recommending this investment at this stage.'[63]

A different pricing model?

6.91 Aligned to the discussions of both Mr Blair and Professor Ergas relating to consumers' 'willingness to pay', a commentator from Nokia, Mr Bob James, came to the following conclusion:

> History shows us that people and businesses … looking back over the last ten years … have paid the same amount or less year after year in most countries yet received faster speeds. …
>
> Many households in urban areas have the option of paying for higher speed today, but choose their plans based on needing more gigabytes per month rather than more megabits per second.[64]

6.92 What Mr James infers is that families are looking for subscription plans that meet their higher download data capacity requirements, rather than just seeking higher speed capacities for those downloads.

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59 Mr Kevin Morgan, *Committee Hansard*, Melbourne, 7 October 2009, p. 53.

60 Mr Daniel Blair, Southern Cross Equities, *Committee Hansard*, Canberra, 20 July 2009, p. 89.

61 Mr Blair, Southern Cross Equities, *Committee Hansard*, Canberra, 20 July 2009, p. 94.

62 Mr Blair, Southern Cross Equities, *Committee Hansard*, Canberra, 20 July 2009, p. 85.

63 Mr Blair, Southern Cross Equities, *Committee Hansard*, Canberra, 20 July 2009, p. 88.

64 Mr Bob James, Nokia Siemens networks APAC, *Communications Day*, 3 November 2009, p. 6.

6.93 Referring to the current price modelling based on speed, Mr James commented that:

> Charging for speed made sense when fast connections to business premises were constructed at one time and at great expense. … It made sense when something rare had to be rationed. But does it make sense when the government is spending considerable amounts of money to make fast broadband universally available at affordable prices?[65]

6.94 Mr James suggests that the NBN Co could charge for usage, rather than for speed, for example applying a monthly fixed fee per premises, plus a charge per gigabyte of usage. Mr James continued:

> This utility style pricing …is a good way of pricing by value for high fixed cost infrastructure – rather like water and electricity. It also aligns the … long term interests of the end user, the retailer and the network owner. [66]

6.95 This line of thought picks up the thread of conversations the committee has had with Mr Arthur Price. In evidence before the committee, Mr Price has consistently advocated Axia's principle that the network owner does not compete with their customer. If network is thus established as a wholesale-only operation, then it is Axia's contention that structural separation will occur by default.

6.96 The network owner (in Australia's case, the NBN Co) will then be focussed on attracting access seekers in order to be commercially viable, rather than actively competing with them and restricting their access. If the fibre network is of the highest quality, access seekers will be attracted to it. They in turn will seek to attract consumers through differentiation of their retail services.

6.97 Mr James' pricing model would dovetail neatly into this scenario, aligning the needs of the NBN Co, its access seekers and the Australian consumers. This has potential as an optional operating model for the NBN Co.

6.98 Mr Price said that wholesale next generation networks, such as Australia's proposed NBN, would need to alter their operations and focus on long term benefits. This is due to the fact that fibre networks have high up-front capital costs. However, Mr Price reminded the committee that FTTP has low recurring maintenance costs and activities. Consequently, the wholesale owner will:

> …depend on the evolution of new, compelling services for end users and a change in the way end users buy. Those are transformational things. They depend on the evolution of a vibrant, competitive retail services sector that provides easy-to-adopt, high value services.[67]

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65 Mr James, Nokia Siemens networks APAC, *Communications Day*, 3 November 2009, p. 6.

66 Mr James, Nokia Siemens Networks APAC, *Communications Day*, 3 November 2009, p 6.

67 Mr Arthur Price, Axia NetMedia Corporation, *Committee Hansard*, Sydney, 5 August 2009, p 10.

6.99 Mr Price then outlined a scenario that he believed would deliver a commercially viable wholesale-only open access network. However, the notable difference between Axia's model and that of the government is Mr Price's suggestion that the starting point is 'a level of financial support', to be provided by the government. Generally 'in the range of a third of the capital,'[68] this financial start-up would be considered a government grant that will not be expected to earn a return.

6.100 However, in this scenario Mr Price claims that the grant would also be a one-off cost to government: '[T]his financial support is not ongoing.' In addition, if regional backhaul was provided through that one-off government grant, he believes there would be no further need for the additional government ongoing funding to ensure ubiquitous regional telecommunication coverage:

> …take into account substantial funding …to regional and rural Australia and they crystallise that into one time span and get rid of it – let me use an example – they would have a payout of having a $2 billion one-time grant… [that] would deal forever with the regional and rural dislocation. That would not be a grant, that would be a saving against ongoing programs.[69]

6.101 Using the scenario above, Mr Price believed that wholesale access prices for each premises in Australia could be between $40 and $60 per month.[70] Mr Price also discussed in detail the key success factor for a wholesale network to be commercially viable, stating that:

> For wholesale fibre-to-the-premises investments to be viable the key criterion is to ensure market penetration covers the cost of capital for the implementation of the fibre-to-the-premises and associated infrastructure.[71]

6.102 Using the access prices of $40 to $60 per month, Mr Price thought it would be possible for a customer to have a voice-plus-ISP price starting at about $50 per month for a lower end 25 Mbps service, ranging to $80 to $100 for 100 Mbps. This compares favourably to what Mr Price believed was the current average cost for a Telstra customer of $100 per month. At those pricing levels, the NBN Co could drive demand for its network, attract access seekers and hence achieve the level of market penetration that would ensure commercial viability. Mr Price stated that the ideal penetration level was around 70 per cent, and until that is achieved there would be shortfalls for the company.[72]

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68 Mr Price, Axia NetMedia Corporation, *Committee Hansard,* Sydney, 5 August 2009, p 11.

69 Mr Price, Axia NetMedia Corporation, *Committee Hansard,* Sydney, 5 August 2009, p 17.

70 Mr Price, Axia NetMedia Corporation, *Committee Hansard,* Sydney, 5 August 2009, p 11.

71 Mr Price, Axia NetMedia Corporation, *Committee Hansard,* Sydney, 5 August 2009, p 10.

72 Mr Price, Axia NetMedia Corporation, *Committee Hansard,* Sydney, 5 August 2009, p 11.

Other pricing guesstimates

6.103 As mentioned previously, without the Implementation Study, the industry can only speculate on what could be the pricing levels of the wholesale access.

6.104 At the Telecoms World conference in Sydney during September 2009, a telecommunications analyst, Mr Mark McDonnell, estimated that wholesale access prices would cost more than double the cost suggested by Mr Price.

6.105 Mr McDonnell also pointed to what he believed was a lack of demand for high speed broadband, stating:

> …no-one has yet provided any real evidence relating to unmet demand for 100Mbps broadband delivery for the household.[73]

6.106 This statement seems to be verified by the ABS statistics cited above that showed there was no growth in the demand over the last six months for services above 24 Mbps.

6.107 Using his own set of assumptions, Mr McDonnell calculated the cost of wholesale prices would be $113 per month if the NBN achieved 100 per cent penetration, ramping up to $905 per month if the network achieved only 12 per cent penetration.[74]

6.108 Mr McDonnell continues that:

> It isn't hard to imagine what would happen to consumer demand under these prices.[75]

6.109 The committee notes that the penetration of the recently completed tasCOLT pilot achieved was only around 25 per cent.[76]

6.110 Mr Blair also provided some estimates of probable pricing, likewise based on a series of assumptions (necessary due to the lack of accurate information), including a take-up assumption of 50 per cent after 10 years of operation. Under his modelling, Mr Blair proffered that:

> …to maintain a 10 per cent return would require that the wholesale price be somewhere around the $110 mark. If you are a retailer … [t]oday's margin levels suggest [a retail price] around the $200-$220 mark. It is conceivable that perhaps it could be $150, but that would be on very thin margins …[77]

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73 Mr Mark McDonnell, BBY, *Communications Day*, 9 September 2009, p. 1.

74 Mr McDonnell, BBY, *Communications Day*, 9 September 2009, p. 1.

75 Mr McDonnell, BBY, *Communications Day*, 9 September 2009, p. 1.

76 *Report on the rollout of the tasCOLT Fibre to the premises Commercial Trial*, October 2008, p.5.

77 Mr Blair, *Committee Hansard*, Canberra, 20 July 2009, p. 89.

6.111 A more optimistic estimate of the cost of wholesale access was made in late October by an Optus analyst, placing the cost at between $40 and $70 per month depending on the level of service selected by the customer. Not surprisingly, this lower-end price was quickly highlighted by Minister Conroy.[78]

6.112 The committee draws attention to the government's commitment that it will provide every house, school and business 'access to ***affordable*** fast broadband.' (emphasis added). Wholesale access prices must be structured to ensure that no Australian business, household or school is excluded from the potential benefits offered by the NBN through a lack of service affordability.

The value of existing assets

6.113 With the view that market penetration rates of around 60 to 70 per cent will be required for the NBN Co to be commercially viable, the obvious question is how can that be achieved by a new network when the current incumbent, Telstra, will also be striving to retain at least 60 per cent of the market.

6.114 The obvious solution would be to utilise as much of Telstra's existing infrastructure – its underground conduits, pits and pipes – as possible. The value placed on Telstra's assets, and consequently the bargaining power it could wield, was also subject to much industry speculation. At least that was the case until 26 October 2009, when the government inadvertently tabled a report by the ACCC that revealed Telstra's true worth to the Australian public.

6.115 Discussion in the industry has centred on the probability that Telstra could negotiate with the government to 'vend in' its assets, including the transfer of its customer base. This would resolve the dilemma of NBN Co in struggling to attract customers to the new network, with the bonus of achieving the immediate high market penetration and hence faster attainment of commercial viability. It could also be (very optimistically) seen by some as a 'win' for Telstra, considering the well known fact that much of their copper customer access network is ageing and consequently heavily maintenance-intensive.

6.116 Conversely, Telstra could have chosen not to negotiate with the government at all. Instead, with the knowledge that it would take the government least eight years before the NBN was built and fully operational, Telstra could easily have made a concerted effort to upgrade its own infrastructure during that period. They would subsequently be able to retain and possibly increase their customer base through their upgraded offerings, leaving the new NBN virtually stranded, underutilised and definitely not commercially viable.

6.117 That option has been severed with the government's tabling in September 2009 of the Telecommunications Legislation Amendment (Competition and Consumer Safeguards) Bill 2009. This bill seeks to amend the several pieces of

78 See discussion, *Communications Day*, 23 October 2009, p. 1.

existing legislation, with the overall effect of enforcing the structural separation of Telstra's wholesale and retail business units, thus removing the incentive to optimise its market power. This legislation is discussed in detail in chapter seven.

6.118 Negotiations between Telstra and the government were ongoing at the time of reporting. No-one will ever know the full impact that the mistaken revelation of Telstra's asset value has made on Telstra's negotiations with the government. However, for commercial viability, the NBN Co needs more than just Telstra's infrastructure; it requires Telstra's customers who are using that infrastructure. This customer base is most certainly as valuable as the infrastructure itself.

Legislation to allow price setting

6.119 One of the outcomes sought by the Telecommunications Legislation Amendment (Competition and Consumer Safeguards) Bill 2009 is to amend the powers of the Australian Competition and Consumer Commission (ACCC) in making access determinations. As noted in the Explanatory Memorandum to the Bill:

> A key reform made by this Bill to Part XIC [of the *Trade Practices Act 1974*] is the removal of the ACCC's role in arbitrating access disputes between access providers and access seekers, and the introduction of a power for the ACCC to set up front the terms and conditions of access to declared services to apply to all access providers and all access seekers.[79]

6.120 This provision seeks to end the ability of Telstra to 'game' the regime, streamlining the pricing process and providing pricing certainty to access seekers and their customers. It is a move that will no doubt be welcomed by the majority of access seekers who have experienced both the investment uncertainty and the costly and time-consuming litigation processes that have plagued the industry for the last decade.

6.121 However, even if the legislation is passed and the ACCC is granted the power to set prices, the committee highlights that there is still no clear basis on which the ACCC can decide prices. The committee again urges that the Implementation Study must be publicly provided to ensure that the previous industry uncertainty around pricing options is not perpetuated by government delays.

Pricing principles

6.122 The Productivity Commission (the Commission) provided a submission to this inquiry that drew from recent reviews it had conducted, noting that the Commission had not undertaken any recent reviews into broadband itself. Regardless of this, the submission provided some very useful principles that govern a number of aspects around the deployment of the NBN, including pricing principles.

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79 Telecommunications Legislation Amendment (Competition and Consumer Safeguards) Bill 2009, *Explanatory Memorandum*, p. 141.

6.123 An insight provided by the Commission is that governments should not regulate prices 'unless it is clearly necessary to avoid larger efficiency losses from the successful exercise of market power.' Although this implies that price regulation in the current telecommunications environment is warranted, the submission then states that:

> Price regulation should not be employed to meet social objectives.[80]

6.124 This places some cloud over the continuation of price regulation once the NBN is fully operational, due to the high level of social benefit. Although social benefits of the NBN are difficult to quantify or monetise for the purpose of a cost-benefit analysis, they are certainly an assumed consequence by the government and major stakeholders.

6.125 The Commission also cautioned that 'price setting is an imprecise exercise' and that '[A]ll of the methods available to regulators for setting an "efficient" price have shortcomings.'[81]

6.126 Having noted that price-setting is an 'imprecise exercise', the Commission warned that there are negative effects of setting prices either too high or too low:

> Prejudicing future investment in important infrastructure services through setting prices too low is likely to be much more economically damaging than allowing service providers some prospect of retaining a modicum of monopoly rent.
>
> - Excessively low access pricing produces adverse effects gradually, but its long-run welfare implications can be significant. If access prices remain too low, no firm (including the incumbent) will make core network investments as it cannot expect a reasonable return on capital.
> - Excessively high access prices discourage service-based competition and lead to excessively high retail prices, less product variety and the potential for inefficient duplication of facilities.[82]

6.127 The Commission recommended that prices should be set so that they are:

> …at least sufficient to cover efficient long-run costs, including a return commensurate with the commercial and regulatory risks involved.[83]

Competitive neutrality

6.128 The Commission's submission also discussed the issue of competitive neutrality, noting that the full operational and governance arrangements are still uncertain. The Commission states that compliance with the policy of competitive

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80 Productivity Commission, *Submission* 87, p. 9.

81 Productivity Commission, *Submission* 87, p. 9.

82 Productivity Commission, *Submission* 87, pp 9-10.

83 Productivity Commission, *Submission* 87, p. 10.

neutrality would ensure that any company operating as a government business would not have a competitive advantage. The submission quotes from the *Commonwealth Competitive Neutrality Policy Statement (1996),* which warned that:

> Where competitive neutrality arrangements are not in place, resource allocation distortions occur because prices charged by significant government businesses need not fully reflect resource costs. Consequently this can distort decisions on production and consumption … [and] also distort investment and other decisions of private sector companies.[84]

6.129 This has clear implications for the NBN Co and also for the ACCC in setting up front costs for access to the NBN Co, which will be a major GBE. The Commission cautioned that:

> …prices set by any government-owned business should fully reflect resource costs and, in doing so, achieve a commercial rate of return on the business' capital.[85]

6.130 This note of caution is not only relevant, but also highlights yet again the fact that the costs of building the NBN are an essential component in the price setting process for the wholesale-only network. Without knowledge of the anticipated cost outlay, the prices cannot be set to 'reflect resource costs' and consequently no-one can determine whether the NBN Co will ever be a commercially viable entity.

Discard the commercial viability requirement?

6.131 There have been a number of stakeholders who have questioned the government's insistence that the NBN Co must be a commercially viable GBE. The founding CEO of Internode is among those who believe that the government is mistaken in trying to achieve this outcome. Mr Simon Hackett aligns the creation of a dedicated national broadband network with the building of Australia's national road system. He notes that the last 50 years of economic growth and prosperity was facilitated by the national roadwork, and suggests that the next 50 years' growth will be equally dependent on building a dedicated national broadband network.

6.132 Consequently, Mr Hackett states that:

> …the new network, like the national road network, should be initially built as a 100% government funded network, not as a public-private partnership, to avoid a tug-of-war between competing drivers that could literally pull the network apart.[86]

6.133 Mr Hackett explained this further:

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84 Productivity Commission, *Submission* 87, p. 11.

85 Productivity Commission, *Submission* 87, p. 11.

86 Mr Simon Hackett, *Communications Day,* 17 August 2009, p. 6.

> The natural agenda of a commercial investor … conflicts fundamentally with the long term, nationally available, wholesale-only aspects of the NBN policy.
>
> …this just serves to highlight that the commercial investment model is the wrong model to apply to a network of this nature![87]

6.134 Professor Joshua Gans was also of the view that the government should not force the NBN Co to be a commercially viable entity. Professor Gans pointed out that the NBN will be a critical infrastructure project for Australia, and stated that:

> There is a lot of discussion regarding the new broadband network and whether it can earn a commercial return. As an economist, I regard that as a largely irrelevant consideration for what is essentially a government infrastructure policy.[88]

6.135 Professor Gans believed that the government must place greater consideration on the long term benefits of the NBN, adding the interesting viewpoint that:

> …part of the future proofing is being not just technologically future proofed but economically future proofed as well. … I see it not as broadband policy but infrastructure policy and that is how we have to think about it.[89]

The promise of pricing equivalence

6.136 Adding to the pricing confusion is the commitment by the government not only to provide affordable broadband across the nation, but also to ensure that everyone in Australia pays the same price for their broadband services. This is in response to thus-far unanswered and long-standing criticisms that regional and remote Australians are forced to pay far higher prices for a service than their metropolitan-living compatriots.

Cross-subsidisation

6.137 In order for wholesale access prices to be equivalent right across the Australian landmass, and over the three different delivery modes, it is apparent that access prices for the less-profitable regional, rural and remote communities will need to be supported by cross-subsidies from the more commercially viable urban centres.

6.138 Minister Conroy has been quoted as confirming that the NBN will offer uniform wholesale pricing across fibre, wireless and satellite:

> This is unashamedly and explicitly a cross-subsidy to deliver equivalent service to all Australians.

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87 Mr Hackett, *Communications Day,* 17 August 2009, p. 6.

88 Professor Joshua Gans, *Committee Hansard*, Melbourne, 7 October 2009, p. 66.

89 Professor Gans, *Committee Hansard*, Melbourne, 7 October 2009, p. 67.

> My ambition is that there will be the same wholesale price for every household for the same speed across satellite, wireless and fibre-to-the-node [premises].
>
> We are saying up front this will be a cross-subsidy, one wholesale price averaged across the country.[90]

6.139 The minister further clarified this several weeks later at Senate Estimates, however also inserted a caveat:

> What I said in Tamworth was that across the fibre network for 90 per cent there would be one price for a product – for example one meg. What I clearly said was that was our ambition, depending on the implementation report … for across the three platforms of wireless, satellite and fibre for there to be consistent pricing, subject to the implementation study…[91]

6.140 The minister was even more tentative as he further clarified:

> What I have talked about is products and, depending on the implementation study, some products may – and I stress 'may' – be able to be priced across all three platforms.[92]

6.141 Yet again, the Implementation Study is creating uncertainty even around the basic assumption of equivalent pricing, which subsequently must impact on the promised 'affordability' aspect of the NBN.

Should the subsidy be individualised?

6.142 The prospect of having uniform wholesale prices right across the national network is most likely music to the ears of those who have been consistently paying much higher prices for broadband services.

6.143 However, in relation to the application of subsidies, the committee again draws attention to the principles laid out by the Productivity Commission in their submission. Their submission stated that:

> …if subsidies for some consumers of particular infrastructure services are judged to be necessary, then consistent with the approach agreed by Australian governments, these should be applied through separate budget-funded CSOs [Community Service Obligations].[93]

6.144 Later in their submission the Commission further expanded on that statement:

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90 See discussion *Communications Day*, 23 September 2009, p. 2.

91 Minster Conroy, Senate Estimates, Environment, Communications and the Arts, *Committee Hansard*, Canberra, 19 October 2009, p. 67.

92 Minster Conroy, Senate Estimates, Environment, Communications and the Arts, *Committee Hansard*, Canberra, 19 October 2009, p. 67.

93 Productivity Commission, *Submission 87*, p. 9.

> Governments in Australia have accepted the general proposition that support for low income, or otherwise disadvantaged, consumers of infrastructure services is better delivered either by addressing the disadvantaged directly or through transparent and directly funded CSOs, rather than requiring providers to cross-subsidise certain users through artificial pricing structures.[94]

6.145 Professor Gans separately offered a solution to ensuring that all Australians have access the benefits of the NBN. In evidence given in Melbourne, Professor Gans explained a way to ensure that the social dividends of the NBN were achieved across all demographics:

> I advocate, in particular, [free] basic broadband services … just a basic level of internet access … there is no reason why you cannot make that freely available. You end up making a return on that since the vast majority of households will want something more than the free service, but if you have a free basic internet service…it allows you to really consider putting government services online. We know that one of the impediments to putting those services online is … simply because there is a section of the population that cannot afford broadband access. Provide a free service and that entire debate changes.[95]

6.146 Professor Gans believed that the government could also include an income-tested provision of computer equipment to ensure that all Australians could access the free service.[96] The bottom line dividend for the government would be the long-term cost savings offered by the broader provision of online government services.

6.147 Yet another alternative solution is to follow the model detailed earlier by Mr Price, from Axia NetMedia. His suggestion was that, if the government provided seed funding that was used to nationally deploy sufficient regional backhaul to facilitate all communities to connect to their nearest regional centre, there would be no need for any future government funding for regional areas at all. Mr Axia suggested that:

> If you do it that way it solves the perpetual cross-subsidy program process; all our numbers would say that it would only take $2 billion of grant to deal with that. The government is spending more than $500 million a year now, so they get a payout on that $2 billion and the long-term spending is over.[97]

Productivity Claims

6.148 There is general consensus that the provision of ubiquitous broadband at equitable and affordable prices will result in productivity benefits across the nation. For example, the Productivity Commission noted in their submission that:

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94 Productivity Commission, *Submission 87,* p.12.

95 Professor Gans, *Committee Hansard,* Melbourne, 7 October 2009, pp 66-67.

96 Professor Gans, *Committee Hansard*, Melbourne, 7 October 2009, p. 69.

97 Mr Price, *Committee Hansard*, Sydney, 5 August 2009, p. 17.

> …an important contributor to Australia's improved productivity performance in the 1990s was a competitively driven acceleration of ICT use in many industries … By analogy, an efficient, well regulated and widely accessible NBN might be expected to facilitate further direct productivity benefits …[98]

6.149 The BCA submission supports this view, making the following claim in their introductory paragraph:

> Investment that raises the speed, quality and coverage of high-speed broadband provision in Australia has the potential to contribute to innovation, productivity and economic growth in the coming decades.[99]

6.150 However, the committee notes that the difficulty of attempting to quantify and monetise productivity increases, coupled with the lack of data both here and overseas, results in some variance in estimates of the NBN's benefits to productivity. This simply adds to the list of uncertainties surrounding the implementation of the NBN.

State of the Regions Report 2008-09

6.151 In the *State of the Regions Report 2008-09* (SOR), an entire chapter was dedicated to the impact of broadband on the economic development of regional Australia. Although it is almost a year since this report was published, and the government's planned NBN has evolved from the then FTTN to the current FTTP proposal, the SOR does carry some important, relevant facts and conclusions from around the nation.

6.152 The chapter on broadband commences with an examination of the ongoing upward trend in statistics in broadband and internet usage – a trend that has continued unabated in the last twelve months, as noted earlier in this chapter. On the basis of the published figures, the SOR makes a clear statement that:

> It is in the nation's interest that the development of the National Broadband Network is facilitated as planned. Further delays will further undermine Australia's competitive position in relation to the benefits of the knowledge economy and of online services.[100]

6.153 Further on, the report finds that any delay to the NBN will constrain the international competitive position of companies, while also delaying the cost savings that could be achieved through broader application of government online services. The report also notes that '[P]oor standards of connectivity constrain innovation',

98 Productivity Commission, *Submission 87*, p. 2.

99 BCA, *Submission 52*, p. 1.

100 National Economics/Australian Local Government Association, *State of the Regions 2008-09*, p. 57.

compromising opportunities to develop, for example, smart network grids that can facilitate the management of greenhouse emissions.[101]

6.154 The report quotes from a Telstra publication, *Towards a high-bandwidth, low carbon future*, released in October 2007, which estimated that telecommunications networks had the capacity to reduce national emissions by around five per cent, with cost savings in the order of $6.6 billion per year.[102] With the current debate about carbon trading schemes, the potential value in carbon credits to Australia will be even more beneficial to the economy today.

6.155 Noting productivity losses quoted in the previous SOR due to inadequate broadband connectivity, the report stated that 'there is no reason to assume any improvements in these numbers for 2008'. No doubt the same can be said for 2009:

> Last year's SOR identified $3.2 billion and 32,000 jobs lost to Australian businesses in the previous 12 months due to inadequate broadband infrastructure and the possibility of an estimated $40 to $50 billion in savings from e-health/e-medicine and smart networks over 10 years.[103]

6.156 The SOR also speculates that 'the rapid uptake of mobile and wireless broadband [could be] a symptom of the lack of a high speed national broadband fibre network.'[104]

A New Zealand perspective

6.157 Late in October 2009 a report was released by three New Zealand authors, who examined the impact of internet connectivity on business productivity. The report analysed three broadband scenarios for businesses using the internet: broadband versus no broadband; slow versus no broadband; and fast versus slow broadband. In their conclusion, the authors noted that:

> Our study is the first, internationally, to estimate the productivity impacts of connectivity upgrades using firm level data after controlling for firms' connectivity choices based on their characteristics.[105]

6.158 The introduction of this report highlights the lack of existing research relating to productivity increases claimed to be attributable to broadband:

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101 National Economics/Australian Local Government Association, *State of the Regions 2008-09*, p. 70.

102 National Economics/Australian Local Government Association, *State of the Regions 2008-09*, p. 70.

103 National Economics/Australian Local Government Association, *State of the Regions 2008-09*, p. 71.

104 National Economics/Australian Local Government Association, *State of the Regions 2008-09*, p. 71.

105 Grimes, Ren and Stevens, *The Need for Speed: Impacts of Internet Connectivity on Firm Productivity*, p. 35.

> Despite well articulated pleas for upgraded internet access, reference to rigorous research that quantifies benefits actually accruing from network upgrades is generally absent in supporting materials. A key reason for this conspicuous absence is that little rigorous research exists that measures the productivity impacts of a shift from one type of internet access to another.[106]

6.159 The overall analysis findings supported the general consensus that productivity is improved through the uptake of broadband:

> We find a … productivity effect of broadband relative to no broadband of approximately 10% across all firms. The estimates indicate a marginally stronger impact on firm productivity … in rural (low population density) relative to urban (high population density) areas but the differences are not significantly different.[107]

6.160 However, an interesting finding seemed to substantiate claims made earlier in this chapter that perhaps Australia does not need 100 Mbps:

> …all of these productivity gains can be attributed to the adoption of slow relative to no broadband, with no discernable additional effect arising from a shift from slow to fast broadband.[108]

6.161 The report cautions that this finding should be interpreted with care, citing a number of possible reasons for the finding, and suggests that further research would beneficial.

Home-grown examples

6.162 The committee was fortunate to hear from several witnesses who are already reaping the benefits of broadband. Although no attempt has yet been made to quantify and/or monetise these benefits, they were none-the-less apparent.

6.163 In Melbourne the committee heard from executives of Ballarat ICT Limited, which 'is a partnership of industry, government and educational institutions', with the underlying belief 'that ICT is critical to creating sustainable and dynamic growth across the region.'[109] When asked to comment on the impact that the availability of higher speed broadband has had on the economic success in the region's ICT sector, their response was:

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106 Grimes, Ren and Stevens, *The Need for Speed: Impacts of Internet Connectivity on Firm Productivity*, p. 6.

107 Grimes, Ren and Stevens, *The Need for Speed: Impacts of Internet Connectivity on Firm Productivity*, p. 37.

108 Grimes, Ren and Stevens, *The Need for Speed: Impacts of Internet Connectivity on Firm Productivity*, p. 37.

109 Ballarat ICT Fact Sheet.

> If you look at development of technology, there is a strong correlation between the infrastructure in place, including really good optical fibre into the [Ballarat Technology] park, and the developments that occurred. The reality is that to attract investment out of the capital cities you have to provide the appropriate infrastructure.[110]

6.164 Noting the attraction factor of the high speed fibre connectivity into the Ballarat Technology Park, another witness said that it 'gives us an economic development advantage'.[111] In fact, the group noted that the Ballarat Technology Park had experienced a slight increase in employment over the past twelve months, despite the global financial crisis:

> In actual fact, we have had a marginal increase in employment. We are still talking to further investors in this sector … It gives me added confidence to continue to push to grow the ICT sector within Ballarat. It is almost like a risk mitigation sector.[112]

6.165 One sector within the Ballarat region that is benefiting from reach of the Ballarat ICT Ltd is the Grampians Rural Health Alliance; the Alliance established a company called GRHANet with the purpose of building a broadband network across the Grampians region. This infrastructure in turn has enabled VoIP services within the region's health sector, so that:

> …every health service in the region is using IP telephony… So all calls between all health services in the region are free.[113]

6.166 This has obviously been financially beneficial to each health service. In addition, GRHANet has enabled administrative benefits to each health service entity across the region through the establishment of shared service set-ups:

> We provide applications, internet services, electronic health records, electronic referral systems and the like from that major centre, that shared service.[114]

6.167 Chapter six discusses the benefits of GRAHNet to local healthcare in further detail.

6.168 There were also benefits for staff in remote locations having the ability to access specialist opinions. This had multiple flow-on benefits of increasing the skill levels of remote health workers, increasing their confidence levels. Having specialist

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110 Mr Mal Vallance, Ballarat ICT Ltd, *Committee Hansard*, Melbourne, 7 October 2009, p. 32.

111 Ms Helen Thompson, Ballarat ICT Ltd, *Committee Hansard*, Melbourne, 7 October 2009, p. 32

112 Mr Vallance, Ballarat ICT Ltd, *Committee Hansard*, Melbourne, 7 October 2009, p. 33.

113 Mr David Ryan, Grampians Rural Health Alliance, *Committee Hansard*, Melbourne, 7 October 2009, p. 77.

114 Mr Ryan, Grampians Rural Health Alliance, *Committee Hansard*, Melbourne, 7 October 2009, p. 77.

advice available on-call and face-to-face had an unexpected benefit of decreasing staff turnover and also acting as an attraction in the recruitment of new staff.[115]

6.169 All these benefits are having very real, positive impacts across the Ballarat health sector and on to Melbourne. Unfortunately none have been collated and documented.

6.170 Another Melbourne witness gave evidence of the productivity improvements resulting from the use of broadband. Mr Brad Wynter, from the City of Whittlesea, described a number of innovations that have been introduced within the council with the aim of reducing the regulation burden on business. The first was to design a common electronic smart form that could be utilised by all Victorian councils and then made available to them across a common platform:

> That EasyBiz project built that platform to cover 21 different regulatory processes including planning, building, land based information, health and local laws … with the aim of simplifying for local businesses their dealings with local government.[116]

6.171 Mr Wynter explained that this principle has subsequently been applied to legislation governing food safety and compliance timetables. Even though there were training programs for businesses that handled food, the council realised there was no common template for businesses to record their compliance information:

> We built an online template system in conjunction with the ANZFA standards and made it available to all Victorian councils. … Since then both New Zealand and Western Australia have looked at the system and have been interested in utilising it.[117]

6.172 These and other innovations discussed by Mr Wynter, clearly demonstrate that through the use of high-speed broadband, the council had improved business productivity by reducing the administrative burden. Other 'mobile applications' decreased the amount of travel required by council officers, again with increased productivity and decreased fuel costs and resultant carbon emissions.[118]

6.173 Again, unfortunately these benefits have not been collated or documented other than anecdotally here in Hansard.

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115 See general discussion, Grampians Rural Health Alliance, *Committee Hansard*, Melbourne, 7 October 2009, pp 80-83.

116 Mr Brad Wynter, City of Whittlesea, *Committee Hansard*, Melbourne, 7 October 2009, p. 92.

117 Mr Wynter, City of Whittlesea, *Committee Hansard*, Melbourne, 7 October 2009, p. 93.

118 See discussion, Mr Wynter, City of Whittlesea, *Committee Hansard*, Melbourne, 7 October 2009, p. 94.

Employment promises

6.174 One of the focal points of building the new network was the government's promise that this would stimulate employment:

> This is a major nation building project that will support 25,000 jobs every year, on average, over the life of the project. At its peak, it will support 37,000 jobs.[119]

6.175 At that time, with the global financial crisis biting hard throughout the world, this was a very welcome promise of economic stimulus and employment opportunities.

6.176 Given that the first rollout has only recently commenced in Tasmania, there have been no reports to date supporting the claim that local jobs are being supported in the areas where the fibre deployment has commenced, or whether the deployment has created new job opportunities, or is just supporting existing employment.

Skills shortage

6.177 While the committee acknowledges that it is early days in the NBN rollout and that figures supporting the claim are most likely unavailable, there is one issue that greatly concerns the committee, and that is the requirement for highly skilled technicians to undertake this rollout.

6.178 The tasCOLT report highlighted the fact that the project, which was comparatively minute in scale compared to the national NBN rollout, was significantly hampered by the lack of skilled technicians required to deploy the fibre.

> Availability and affordability of skilled installation contractors also contributed to delay and final completion date of the network.[120]

6.179 This claim should ring alarm bells for the government to make sure that there are sufficient skills training in the appropriate technical fields that will provide the number of skilled, work-ready employees to undertake the rollout in each region.

6.180 The committee sought some information from the Tasmanian Government on how it would ensure there were sufficient numbers of appropriately trained workers ready to rollout the NBN in Tasmania. The committee also sought to hear from the Tasmanian Skills Institute on the courses they might currently have underway that would provide places for those requiring new skills or an upgrade of current skills. Both these potential witnesses declined to appear before the Committee.

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119 http://www.minister.dbcde.gov.au/media/media_releases/2009/022, accessed 16 November 2009.

120 tasCOLT, *Report on the rollout of the tasCOLT Fibre to the Premises Commercial Trial*, October 2008, p. 19.

6.181 The committee did hear relevant evidence from the Ballarat ICT Limited, who responded to the question of whether the NBN would result in local jobs. The representatives noted that it was '[c]ritical … to understand the timeframes' that the training facilities would have to provide the training:

> If the NBN was to be launched in Ballarat in six months, there is no doubt that we would be challenged in finding the full range of skills necessary to support implementation. If we have a window of three of four years, … the University of Ballarat, particularly through its TAFE division, is one mechanism we would try to ramp up the skilling of labour.[121]

6.182 The committee highlights that the government needs a lead time of three to four years to ensure an appropriately skilled workforce is ready to deploy the NBN. Unfortunately, the reluctance of witnesses to speak with the committee does not provide any assurances that the lessons learned during the tasCOLT trial have been heeded by the government.

Committee view

6.183 The committee draws the attention of the government to the recently tabled annual report by the Productivity Commission. In the section devoted to 'getting the most out of stimulus spending', the Commission highlights the 'long-term economic effects' that this stimulus spending will have. The Commission states that:

> The Government has affirmed that efficient public investment in infrastructure requires the application of detailed cost-benefit analysis and transparency at all stages of the decision-making process, to ensure that the highest economic and social benefits are delivered. (Australian Government 2008c). It has committed to apply rigorous evaluation criteria to allocations from the newly established 'nation building' investment funds …[122]

6.184 The Commission highlights the fact that the 'guidelines have not been universally applied to date', holding up the NBN as an example:

> …the decision to build a National Broadband network, although endorsed by Infrastructure Australia, was not based on detailed cost-benefit analysis.
> …
> The consistent application of rigorous project evaluation methods remains fundamental to ensuring that investments are the most beneficial.[123]

6.185 The committee condemns the government's refusal to conduct a cost-benefit analysis on the implementation of the national broadband network. The committee urges the government to follow its own guidelines in requiring a transparent evaluation of the costs and likely benefits of this proposal.

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121 Mr Vallance, *Committee Hansard*, Melbourne, 7 October 2009, p. 26-27.

122 *Productivity Commission Annual Report 2008-09*, p. 21.

123 *Productivity Commission Annual Report 2008-09*, p. 21.

6.186 The committee urges the government to produce an interim report on the Implementation Study, to provide the Australian public and the telecommunications industry with a level of confidence in the progress of this massive infrastructure project. The committee also urges the government to ensure the final Implementation Study report is not delayed beyond February 2010 and is open to public scrutiny.

6.187 The committee is disappointed at the lack of benchmark data that could be used to measure the predicated impact on productivity of NBN. The committee urges the government to commission an ongoing review by the Productivity Commission to capture the productivity benefits across all Australian communities and particularly across all sectors of business and industry. The committee consequently makes the following recommendations:

Recommendation 4

6.188 That the government conducts a rigorous cost-benefit analysis of its NBN proposal before the NBN Co enters into any new asset purchasing agreements for the mainland deployment.

Recommendation 5

6.189 That the government provides an Interim Implementation Study Report by 31 December 2009. This must provide a progress account of the planning of the NBN, including the progress of the deployment in Tasmania and lessons learned from that deployment.

Recommendation 6

6.190 That the government immediately undertakes a skills audit for the NBN, detailing the training course required, the training timeframes involved and the training institutions available to ensure there is a fully skilled workforce ready to deploy the NBN in each region.

Recommendation 7

6.191 That the cost-benefit analysis, the Interim Implementation Study Report and the Final Implementation Study, are all released for public scrutiny within 14 days of completion.

Recommendation 8

6.192 That the government commissions the Productivity Commission to undertake an annual ongoing evaluation of the impact on productivity resulting from broadband uptake, across all community, business and industry sectors, with the first report to be tabled in parliament before the last sitting day in 2010.

Recommendation 9

6.193 That if the Implementation Study concludes the NBN project specifications are unrealistic, not practical or uneconomical, that the government must reassess its overall policy approach.