Dissenting report—Mr Paul Neville MP, Mr Paul Fletcher MP, Mrs Jane Prentice MP

1. Summary

1.1   This Dissenting Report sets out the views of the Coalition Members of the Committee, Paul Fletcher MP, Paul Neville MP and Jane Prentice MP.

1.2   We believe this inquiry into the NBN was the wrong kind of inquiry at the wrong time. It was a highly political exercise, designed to generate a feel-good report offering support for the rollout of the NBN. To be meaningful, this inquiry should have been conducted before the decision to spend $43 billion on the NBN, and it should have been structured as a cost-benefit analysis, rather than a shopping list of benefits without any consideration of cost.

1.3   The Coalition supports an upgrade of Australia's broadband infrastructure. We think Labor's NBN is the wrong way to do it. It spends far too much money (with total announced expenditure already exceeding $50 billion); it establishes a new government owned monopoly; and it will lead to higher prices and poorer service than in a competitive market.

1.4   Our views have been very much reinforced by this inquiry. We have seen some impressive examples of the ways in which broadband can deliver benefits in health, education, government, business and other sectors. But that has never been in dispute; what is in dispute is the right way to secure these benefits, what kind of networks are required, and who should own and operate them.

1.5   Our first conclusion is that the NBN has been poorly planned and implemented. The evidence we received suggests that:

- There was little planning prior to the 2009 announcement that the Rudd Government was abandoning its fibre to the node network and building a fibre to the premises network

- Key network and rollout decisions are driven by political considerations

- There is poor communication with industry

- The degree of preparation by Commonwealth Departments is unimpressive.

1.6   Our second conclusion is that many of the key claims which have been made about the NBN by the Rudd-Gillard government are overblown and cannot be substantiated. For example, the benefits of telemedicine will not be secured without a great deal of additional work – upgrading broadband access to homes is only one part (and not the most critical one) of the telemedicine picture. It is clear that the NBN is not the only way to achieve the benefits of broadband, and it will not necessarily deliver higher take up or lower prices.

1.7   We find that the central premise of the NBN policy – that there is overwhelming demand for fibre to the home – is wrong. That is evident from the poor early take up, from the relatively poor response to the Inquiry, and from extensive evidence that many stakeholders are not interested or engaged.

1.8   The single most striking conclusion from this inquiry is that there were very few persuasive examples given of applications which actually require the speeds that the NBN will deliver. This was so across a wide range of sectors including telemedicine, education, business and government.

1.9   A related point was the failure to demonstrate the need for this speed to 10 million premises – as opposed to a rollout targeted to a much smaller number of key institutions such as schools, hospitals and libraries.

1.10   There was significant evidence to the Committee pointing to better approaches than the NBN – such as targeting rapid improvements to black spots, or targeting higher speeds to key institutions.

1.11   Finally, we were struck by some of the very nasty side effects of the Rudd-Gillard Government's NBN policy. In particular, by establishing a government owned monopoly, this policy is suppressing competition and handing enormous power to NBN Co's management team. The likely consequence – prices will be higher and take up lower than under a competitive market structure.

1.12   Coalition Members thank all of those who made submissions to and appeared before the Committee and those who hosted demonstrations and site visits. We also thank the Committee staff.

2. The wrong kind of inquiry at the wrong time

a. A highly political exercise – after the decision was taken

1.13   This inquiry was established following a reference by Infrastructure Minister Anthony Albanese in late 2010. The terms of reference were essentially a laundry list of possible benefits that the NBN might offer. It was designed to be a political exercise, drumming up supportive testimony in favour of the NBN and resulting in a feel-good report offering support for the rollout of the NBN.

1.14   To be meaningful, this inquiry should have been conducted before the Rudd government took the decision to spend $43 billion on the NBN. There is little point in investigating the benefits to be secured from the NBN over eighteen months after the decision has been taken. The clear aim of this inquiry was to generate political support for the NBN.

1.15   The Labor controlled committee set out to obtain supportive submissions from as many people and organisations as possible. Given that the NBN is a project involving very large expenditure – in excess of $50 billion – it is not difficult to generate a significant number of submissions from those expecting to benefit.

1.16   The Committee secretariat sought submissions from a range of interested parties – many of them arms or creatures of government. Of 235 organisations which provided submissions, 54 were local councils and their umbrella organisations and a further 16 were Regional Development Authorities (RDAs).[1]

1.17   It is worth considering in more detail the evidence provided by one RDA, in Tasmania. Like all RDAs, its funding comes from the Commonwealth Government.[2]

1.18   The Tasmanian RDA was very supportive of the NBN. Its submission cited a range of benefits to be obtained. Under the heading 'Impacting On Regional Economic Growth And Employment Opportunities,' there were

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1   <http://www.aph.gov.au/house/committee/ic/NBN/subs.htm> accessed 13/8/11.
2   *Committee Hansard*, Launceston, 10 March 2011, p.37.

nine such benefits, including adding to the liveability of a region, enabling employees to work remotely, increasing market opportunities and facilitating the emergence of industries that leverage from IT and exposure to global markets, such as animation/education and software development.[3]

1.19   When asked how they came up with the material in the submission, witnesses from RDA Tasmania stated, 'Through consultation.'[4] On further questioning, it emerged that a survey about the NBN sent to 1500 stakeholders had received two responses.[5]

1.20   Naturally RDAs will argue for extra investment to benefit their region, and Coalition members make no criticism of the Tasmanian RDA or any other witness. However, the public policy issue is whether the Rudd Gillard Government's $50 billion NBN is the most cost effective and sensible way to upgrade Australia's broadband infrastructure; in considering that question it is not particularly enlightening to know that a government funded RDA supports it, whereas the tangible evidence from the low response rate to the survey is rather more enlightening.

b. Should have been a cost benefit analysis

1.21   Seeking to assess the benefits of a project such as the NBN, without a consideration of the costs, is a fairly pointless exercise.

1.22   As witnesses from the Department of Finance stated, cost must be a consideration in any evaluation:

> **Mr Archer:** ...If you were making a decision about what to put in place today and that was a significant amount of money, as this is, then you would want to look at making a choice around the technology that arguably demonstrated the greatest benefit into the future so that you could continually leverage and build on that.
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> **Mr FLETCHER:** Does cost come into that consideration as well?
>
> **Mr Archer:** Of course it would have to be a factor.[6]

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3   RDA Tasmania, Submission 113, pp 4-5.
4   *Committee Hansard*, Launceston, 10 March 2011, p.35.
5   *Committee Hansard*, Launceston, 10 March 2011, p.36.
6   *Committee Hansard*, Canberra, 27 May 2011, p 43.

1.23   The stated policy of the Rudd-Gillard government in relation to major infrastructure projects is that there should be a cost-benefit study before a decision is taken.

1.24   In conducting this inquiry, the Committee should have made an assessment of the benefits of the NBN and weighed them up against the costs. Unfortunately, this approach was specifically ruled out, despite it being proposed by Coalition members.

1.25   This Committee is not alone in having its work so circumscribed. As Infrastructure Australia notes in its submission, the Rudd Government's *Nation-Building Funds Act 2008* specifically excluded Infrastructure Australia from conducting a cost benefit study of the NBN, notwithstanding that it has this responsibility in relation to other major infrastructure projects it considers.[7]

1.26   As a result of the limitations on the Committee's working methods, this inquiry was conducted in an Alice i Infrastructure Australia, Submission 10, p 2n Wonderland world. Its terms of reference asked the Committee to consider the optimal capacity and technological requirements of the network, but the Committee was prevented from considering cost.

1.27   Some argue that cost benefit analyses cannot be conducted in relation to a project like the NBN. However, many witnesses before the Committee acknowledged that it would be feasible to conduct a cost benefit analysis. For example, Mr David Jackson, Manager Economic Development, Brisbane City Council, spoke of the Council's work in quantifying the benefits from a broadband network rollout the Council had been planning.

> **Mr FLETCHER** — In the work you have done in determining some of the benefits of building a network — for example, you talked about reduced travel time and so on — can we take it from that that it is your view that it is possible to itemise and indeed quantify the benefits of building a new network and then compare that against the cost of building such a network?
>
> **Mr Jackson** — We have done a lot of work in that space within the constraints on our ability to apply resources to the task. What is clear is that there are some quantifications that can be done….[8]

1.28   Mr Jackson agreed that it is not impossible to carry out a cost benefit analysis of a broadband network rollout.

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7   Infrastructure Australia, Submission 10, p 2.
8   *Committee Hansard*, Brisbane , 18 March 2011, pp.9.

> **Mr FLETCHER**—You would not accept the proposition that it is simply impossible to compare the costs with the benefits of a broadband network.
>
> **Mr Jackson**—I think we can go some way down that track.[9]

1.29   Similarly, Dr Tim Williams, who has carried out a major study into broadband in Australia and Britain at the request of Huawai, told the Committee that it is feasible to conduct a cost-benefit study of broadband infrastructure.

> **Mr FLETCHER:** What is your perspective on the way that the networks and their benefits might be assessed for public policy purposes? You have given us some very interesting, tangible examples of cost savings. Do you believe that it is possible to construct an economic case that is based upon those kinds of savings or other benefits?
>
> **Dr Williams:** Yes. There are some established principles around doing that. It is interesting in the UK, and it is something worth looking at. The Treasury has a Green Book appraisal process. I am sure you have similar here, but probably not quite the same. It is worth looking at because it looks at some of the externalities that are claimed from investments. It is very rigid about that. We need professional scepticism about this, but at the end of the day I think it can be proven. There are some established ways of doing that.[10]

1.30   The Business Council of Australia argued that there should be a cost-benefit analysis conducted before the decision to build the NBN is taken.

> The BCA continues to advocate for the NBN to be subjected to a cost-benefit analysis to demonstrate it is the best way forward for the development of the communications sector. It stands to reason that if alternative industry models can provide broadband services to consumers and businesses at a lower cost it will result in higher take-up and use, with greater flow-on benefits.[11]

1.31   As the US senator Everett Dirksen once said, 'A billion here, a billion there, pretty soon it adds up to real money.' In anybody's language, the Australian people are spending real money on the NBN. But we have no evidence quantifying the benefits to be received – and this Inquiry did not fill this gap.

9   *Committee Hansard*, Brisbane , 18 March 2011, pp.9.

10   *Committee Hansard*, Sydney, 29 April 2011, p 16.

11   Business Council of Australia, Submission 207, p 3.

3. Majority Report

1.32   Given the nature of this exercise, it is unsurprising that the Committee's Majority Report gives a glowing endorsement of the NBN.

1.33   The Majority Report repeatedly cites applications which require speeds very much lower than the NBN is being engineered to deliver. To take three examples:

- At paragraph 3.53 there is a discussion of the remote home monitoring application developed by Intel-GE Care used in the Hunter Nursing trial last year – with no reference to the fact that the required speed for this system is 512 Kbps (one two hundredth of the NBN's 100 Mbps)[12]

- At paragraph 5.28 and following there is a discussion of 'smart grids' – that is, electricity distribution networks containing 'smart meters' at the customer end which feed back data about electricity usage in real time. Smart meters use quite limited bandwidth, but this fact is buried deep in paragraph 5.28: '…individual smart meters do not require high bandwidth in themselves…'

- The discussion of agricultural sensors at paragraph 5.35 and following fails to disclose that the data requirements for such sensors are quite low. Evidence from Mr Robert Walker of Agforce is cited, but the Majority Report fails to note that Mr Walker agreed that the bandwidth requirements are low and it is general availability not speed which matters.[13]

1.34   Coalition Members note that the Majority Report conspicuously fails to get to grips with the central question: how can we be sure that there will be substantial take up of services on the NBN? This is critical financially: unless the NBN achieves the projected take up, it will not achieve its revenue targets and taxpayers will be stuck with a hugely loss making venture.

1.35   But it is just as important a question when testing the public policy objective of the NBN: to drive broadband take up so as many Australians as possible can capture the benefits of high speed broadband services. There is very little value in having a widely available high speed network if only a small proportion of the population connects because, for example, the retail prices are too high.

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12   *Committee Hansard*, Sydney, 29 April 2011, p.45.
13   *Committee Hansard*, Brisbane , 18 March 2011, p.43.

1.36   The policy premise of the NBN is that by 2021 around 8.5 million
        Australian households will purchase services over the network,
        overwhelmingly for purposes of communication and entertainment. Then
        it is assumed that there will be spin off benefits in areas like health,
        education, e-commerce, regional development and so on – all of the
        various elements of the terms of reference of this inquiry.

1.37   Of course, the Coalition has many well known objections to the model: but
        even those who are supporters of the model would presumably wish to
        use an inquiry like this to test its internal logic. Yet the Majority Report
        has virtually nothing to say about how, commercially, take up by 8.5
        million households is to be achieved. It limits itself to some motherhood
        recommendations in chapter 11 about a 'comprehensive engagement
        strategy' and using RDAs in 'facilitating local community engagement.'

4. NBN is poorly planned and implemented

1.38   The first conclusion which emerges from this Inquiry is that the NBN has
        been poorly planned and implemented. The evidence we received
        suggests that:

        ■ There was little planning prior to the 2009 announcement that the Rudd
          Government was abandoning its fibre to the node network and
          building a fibre to the premises network

        ■ Key network and rollout decisions are driven by political
          considerations

        ■ There is poor communication with industry

        ■ The degree of preparation by Commonwealth Departments is
          unimpressive.

a. Little Planning Prior to 2009 NBN Announcement

1.39   In early 2009 the Rudd Government abruptly changed its broadband
        policy – from a fibre to the node rollout costing $4.7 billion to a fibre to the
        premises rollout costing $43 billion. Evidence to the Committee suggests
        that little planning work was done prior to this decision, and little expert
        advice was sought.

1.40   The department with primary responsibility for broadband policy is the
        Department of Broadband, Communications and the Digital Economy.
        This Department informed the Committee that there was no formal

analysis done, before the decision in early 2009 to change from a fibre to the node rollout to a fibre to the premises rollout, as to the benefits that would be obtained.

> **Mr FLETCHER:** As part of that, was there work done of the kind that is included in your submission as to the sorts of things that could be delivered over fibre to the premises that could not be delivered over fibre to the node?
>
> **Mr Heazlett:** The decision per se was not one that was consciously addressing the relative benefits of a fibre-to-the-node approach and a fibre-to-the-premises approach. The costs or potential costs involved in pursuing a fibre-to-the-node program were of a similar order of magnitude to the costs identified in relation to fibre to the premises. Given that and the conclusive views of a wide variety of people that fibre to the premises was far preferable and offered far greater potential for the future than fibre to the node, the government decided to go to the fibre-to-the-premises approach.[14]

1.41   Australia's public universities share ownership of a high speed research network, AARNET, which is a major repository of expertise in high speed broadband. However, AARNET was not consulted before the 2009 decision.

> **Mr FLETCHER:** I am interested, given your organisation's expertise in this field, in whether you were asked to provide advice to government in advance of the decision announced in April 2009 to build a National Broadband Network?
>
> **Mr Hancock:** Not that I am aware of.[15]

1.42   In hearings before the Committee, the Department of Health and Ageing not able to provide the Committee with any indication of what advice was provided by the Department to the Government in advance of its 2009 decision on the NBN. It took this question on notice. In its subsequent response to the Committee, the Department could cite no advice given any later than 2006.[16]

1.43   A similar lack of planning appears to have characterised the Tasmanian rollout.

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14   *Committee Hansard,* Canberra, 27 May 2011, p 57.

15   *Committee Hansard,* Canberra, 27 May 2011, p 29.

16   Department of Health and Ageing, *Submission 212.1*, p.1.

> **Mr FLETCHER**—Has the Tasmanian government done any
> survey work or projections on the likely appetite for services over
> the NBN?
>
> **Mr McGee**—No, not that I am aware of.[17]

1.44   Nor it seems was consultation conducted with many relevant experts
        before the decision was made. This point was made rather crisply in a
        submission to the Committee from the Australasian Telehealth Society.

> While telehealth has often been proposed as a key justification for
> proceeding with the National Broadband Network, the views of
> the Australian telehealth community have not previously been
> sought, nor a comprehensive case for telehealth on the NBN
> presented.[18]

b. Politics driving rollout decisions

1.45   The Tasmanian Chamber of Commerce and Industry was very critical of
        the decision to choose three regional towns as the first location for NBN's
        roll out in Tasmania, stating that this was for political reasons.

> The three that they chose, we believe were totally wrong. They
> were chosen for purely political reasons. All three were marginal
> seats.[19]

1.46   Mr Wallace of the TCCI stated that his organisation would have preferred
        a higher priority to be given to Hobart and Launceston, so as to secure
        productivity gains. He noted that these cities already have some optical
        fibre infrastructure.[20]

1.47   With political imperatives driving rollout decisions, there appears to have
        been little opportunity given to local communities to engage in advance
        planning to maximise the opportunities from the NBN. Dorset Council for
        example, covering the Tasmanian town of Scottsdale, received little
        advance notice that it would be a first release site.

> **Mr FLETCHER**—When did Dorset Council first learn that
> Scottsdale was to be an initial site for NBN?
>
> **Mrs Mercer**—I think it was sometime between July and September
> 2009.

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17 *Committee Hansard*, Hobart, 11 March 2011, p.70.
18 Australasian Telehealth Society, Submission 101, p 1.
19 *Committee Hansard*, Hobart, 11 March 2011, p.22.
20 *Committee Hansard*, Hobart, 11 March 2011, p.16

> **Mr FLETCHER**—So it was not on the basis of a proposal or a
> submission the council made.
>
> **Mrs Mercer**—No.
>
> **Mr FLETCHER**—You were just notified of that.
>
> **Mrs Mercer**—We were, yes.[21]

1.48   Similarly in Townsville, there was no advance notice that Townsville
       would be a first release site.

> **Mr Hayward**…the first we heard as a council that we were a first
> release site was the press release. That did catch us by surprise. As
> a result of that, we have had to change how we do some of our
> internal operations, reallocate resources to actually take advantage
> of the opportunity that presents itself.[22]

c. Poor communication with industry

1.49   NBN Co appears to have done a poor job of communicating with industry.
       Mr Jeremy Moffat, Managing Director, North Queensland Telecom, a
       small ISP, expressed this concern:

> **Mr Moffat**—I probably would not say that I feel like I am shut out.
> I think that the small ISP area in general has just been a little bit
> overlooked.[23]

1.50   Mr Moffat explained that he knew little about what was to happen locally.

> **Mr Moffat**—I do not know anything about NBN locally other than
> it is going to be working out of Aitkenvale. I do not know how to
> get access to it. I do not know what my—
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> **Mr SYMON**—There is not the information there?
>
> **Mr Moffat**—Yes.[24]

1.51   In Tasmania the TCCI told the Committee of the Tasmanian business
       community's frustrations regarding the lack of information provided to
       business.

> **Mr Wallace**—In the last eight months we have had no connection
> with Tasmanian NBN Co. or NBN Co. simply because we became
> frustrated, as did a lot of other organisations. The information we

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21   *Committee Hansard*, Launceston, 10 March 2011, p.5.
22   *Committee Hansard*, Townsville, 19 April 2011, p. 14.
23   *Committee Hansard*, Townsville,19 April 2011, p.23.
24   *Committee Hansard*, Townsville,19 April 2011, p.23.

know is on the government website, so we can see where the
rollout is. We had to be proactive. We had no-one coming to us.[25]

d. Unimpressive Preparation for NBN by Commonwealth Departments

1.52   It was evident that key government departments so far have done little
          work on leveraging the NBN rollout. For example, when the Department
          of Innovation, Industry, Science and Research told the committee about
          the work of its Enterprise Connect program in regional areas, it emerged
          that this work has not been coordinated with the NBN rollout.

> **Mrs PRENTICE:** Are you matching this with the rollout? Have
> you targeted Scottsdale, for example, and are you now targeting
> Armidale?
>
> **Mrs Zielke:** Not particularly in that regard…[26]

1.53   The Department of Finance told the committee that there was no
          government wide policy on teleworking.

> **CHAIR:** … Is there a broader government agency policy on
> teleworking or does it happen ad hoc on individual arrangements?
> Do you know what the status is more broadly?
>
> **Mr Archer:** Certainly it does happen on an ad hoc basis.
> Individual agencies have positions on teleworking.[27]

1.54   The Department of Broadband, Communications and the Digital Economy
          was unable to give any examples of Australian government departments
          communicating with clients via videoconferencing.[28] When asked about its
          responsibilities in relation to driving government usage of information
          technology, DBCDE said it was not doing this work itself:

> **Mr SYMON:** Is it your department that is working on this
> transition to enable that to happen, or is it done across a number of
> departments?
>
> **Mr Rizvi:** It is probably fair to say that we are something of a
> catalyst rather than doing the work ourselves. What we are doing
> is encouraging individual departments where these opportunities
> arise, particularly linked to the NBN, to consider and test them.[29]

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25   *Committee Hansard*, Hobart, 11 March 2011, p.25.
26   *Committee Hansard,* Canberra, 6 July 2011, p 8.
27   *Committee Hansard,* Canberra, 27 May 2011, p 39.
28   *Committee Hansard,* Canberra, 27 May 2011, p 55.
29   *Committee Hansard,* Canberra, 27 May 2011, p 55.

1.55   Nor did the Department of Regional Australia, Regional Development and Local Government inspire confidence about the work being done to capture the claimed economic benefits to regional Australia from the NBN.

1.56   When told that the Committee was interested in what appears to be a significant presence of home based businesses in regional areas, their response was:

> **Mr Atkinson:** As you said, there is no detailed data on that.[30]

1.57   This became a recurring theme in the Department's answers:

> **Mr FLETCHER:** On page 5 of your submission you quote some data about the lower rate of internet and broadband take-up in regional Australia. How much of that is due, in your view, to lower incomes and therefore a lower capacity to pay in regional Australia? The heading is 'Current internet access and use in regional Australia'.

> **Mr Atkinson:** We actually have not done any detailed analysis of what has driven those statistics. Those are ABS statistics.[31]

1.58   When asked about a statement in their submission expressing concern that some areas may not be broadband ready, and what the consequences of not being 'broadband ready' might be, the answer was:

> **Mr Atkinson:** I am not certain. I have not read the report.[32]

1.59   Nor it seemed could the Department provide any statistical evidence:

> **Mr FLETCHER:** You talk about the fact that quite a number of the RDAs have identified improved information technology access as a priority. Clearly, from first principles, that make sense as a thing to identify. I am interested to know whether there is any survey data or other data that you are aware of that any of the RDAs have gathered to support or underpin those recommendations that they have made.

> **Mr Atkinson:** I am sorry; I do not have the detail of the recommendations underpinning each of the individual RDA plans.[33]

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30 *Committee Hansard,* Canberra, 27 May 2011, p 45.
31 *Committee Hansard,* Canberra, 27 May 2011, p 46.
32 *Committee Hansard,* Canberra, 27 May 2011, p 47.
33 *Committee Hansard,* Canberra, 27 May 2011, p 47.

1.60   Nor had the Department reviewed the outcomes from earlier regional communications initiatives in Australia. When asked if they had had 'the opportunity to go back and look at previous efforts to improve communications infrastructure in rural Australia,' the following exchange resulted:

> **CHAIR:** And capture a bit of an overall picture over time of communications across regional Australia—not the particular policies but the history of it and where it is that?
>
> **Mr Atkinson:** We have not done a detailed analysis of the communications history.[34]

1.61   The Western Australian Internet Association highlighted the poor use of on line communications by government agencies like Centrelink and the Australian Taxation Office today.

> Having said that, there is certainly ample opportunity for the government to engage in the internet today. Organisations like Centrelink and the ATO really have quite rudimentary engagement with the internet at the moment and they could do much more.[35]

5. NBN is oversold: many claims cannot be substantiated

1.62   The second conclusion from this inquiry is that many of the key claims which have been made about the NBN by the Rudd-Gillard government are overblown and cannot be substantiated.

a. Telemedicine claims are overblown

1.63   Telemedicine stands out as an area where the claims made for the benefits the NBN will deliver are overblown. The NBN will not stimulate health and telemedicine without a great deal of additional work. Further, there is a risk that the focus on the NBN will divert attention from higher priorities in this field.

1.64   Dr Steve Hambleton, Vice-President of the Australian Medical Association, highlighted the many barriers which must be overcome before there is widespread adoption of e-health.

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34   *Committee Hansard,* Canberra, 27 May 2011, p 47.
35   *Committee Hansard,* Perth, 5 May 2011, p 27.

Mr FLETCHER— The impression I have from you is that there are non-network barriers to the efficient exchange of information between all the different elements of the health system. There is a lack, for example, of a central software package that would allow the routine exchange of information about a patient from, for example, a GP to a specialist or a GP to a radiologist to allow the scan to occur, and then to the specialist to do the consultation. Is that a fair summary?

Dr Hambleton— Absolutely. We have just developed in Australia the unique patient identifier, which is step one. The e-health agenda is talking about this magic connectivity that is going to allow patient controlled access. All of these things need to be put in place so we can actually use the pipes that are going to go on the ground.

Mr FLETCHER— So NBN, of itself, is not going to solve that particular problem; you need a separate attempt to tackle that?

Dr Hambleton— Correct.[36]

1.65   This point was expanded upon in the AMA's submission.

> Further, the delivery of healthcare using high speed internet is also contingent on the development and implementation of a range of eHealth tools. For example, an electronic medical record that links reliable and relevant medical information across healthcare settings would allow treating medical practitioners to access patient information quickly to inform their clinical decisions. Other eHealth tools like ePrescribing and discharge summaries could be made available across the healthcare sector via interoperable systems.[37]

1.66   A similar point was made by the Australasian Telemedicine Association.

> The NBN will remove some technical barriers to new models of health care which will incorporate telehealth as a means of delivery of health care services, not simply consultation. However, the slow uptake of eHealth technologies over the last few decades has shown that such paradigm shifts are very difficult to implement in the health system. There will need to be a national strategy for facilitating and encouraging the changes to health care

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36   *Committee Hansard*, Canberra, 4 March 2011, pp.21-22.

37   Australian Medical Association, Submission 75, p 2.

> delivery which will justify the NBN on the basis of its ability to deliver healthcare services.[38]

1.67   National ICT Australia took a similarly cautious perspective.

> However, non technical barriers, such as billing for e-Health services for example, will also need to be addressed. It is important to understand that while pervasive broadband may remove some blockages, culture and process must be able to take advantage of what the technology allows.[39]

1.68   Consumers e-Health Alliance also argued very forcefully that the NBN is not a solution to e-Health in itself.[40]

b. It's not a high speed research network & does not underpin the SKA

1.69   The Department of Innovation, Industry, Science and Research (DIISR) stated that the NBN would support and complement investments in the Australian research and education network (AREN).[41]

> The NBN offers sustainable solutions for those areas that the AREN is still striving to reach.[42]

1.70   It is important to be clear that the NBN is not a research network. As AARNET Chief Executive Chris Hancock explained to the Committee, there is clear distinction between a consumer broadband network like NBN and a high speed research network like AARNET (the major component of the Australian Research and Education Network or AREN).

> **Mr Hancock:** … every modern economy has a separate research network like AARNet. They are called NRENs, national research and education networks—and in our submission we outlined that there are 119 NRENs around the world—and they are essential for the development of the internet in each of those countries well beyond the home.[43]

1.71   Mr Hancock expanded on this point in later evidence.

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38   Australasian Telehealth Association, Submission 101, p 12.
39   National ICT Australia, Submission 198, pp 10-11.
40   Consumers e-Health Alliance, Submission 201.1, p 4.
41   *Committee Hansard,* Canberra, 4 March 2011, p 93.
42   Department of Innovation, Industry, Science and Research, Submission 219, p 36.
43   *Committee Hansard,* Canberra, 27 May 2011, p 25.

> **Mr FLETCHER:** I think what you are putting to us is that there is a
> clear distinction to be drawn between, on the one hand, a research
> network which is very high bandwidth to, at most, a few hundred
> or a few thousand locations and then, on the other hand, what you
> might call a retail broadband network designed to offer fast but an
> order of magnitude lower speeds than yours to millions of
> premises.
>
> **Mr Hancock:** That is correct.[44]

1.72   In this light it is difficult to understand DIISR's statement in its submission
        about the role of NBN in supporting research in areas where the AREN (of
        which AARNET is the largest component) does not have a presence.

1.73   DIISR also argued that the NBN was of benefit to Australia's bid for the
        'square kilometre array'(SKA) – the proposed international research
        telescope which Australia is bidding to secure.

> Areas of research that rely increasingly on the gathering and
> synthesis of very large data sets, including those collected through
> sophisticated research instruments, have the potential to benefit
> from the NBN. A clear example is radio astronomy research,
> through the impact on the Square Kilometre Array (SKA) bid
> described further in this chapter.[45]

1.74   Ms Anne-Marie Lansdown told the Committee:

> Under the NBN rollouts in Western Australia through the
> Regional Backbone Blackspots Program we will be significantly
> supported in our bid for the square kilometre array by providing
> the connectivity support in the viability of our bid.[46]

1.75   In a subsequent hearing, AARNET Chief Executive Chris Hancock
        explained that the connectivity is being provided by AARNET and not by
        NBN:

> **Mr Hancock:** …the area [where the SKA Pathfinder is being built]
> is called Boolardy Station and it is a remote outpost 400 kilometres
> north-east of Geraldton. AARNet has managed the build of the
> fibre from Geraldton to Boolardy on behalf of the CSIRO and there
> are about 30 [kilo]metres to go of the 400 kilometres as of today.
> When that is connected, it has to be in a remote area, as you know,
> because of low noise levels and any other signals. That is fibre that

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44   *Committee Hansard,* Canberra, 27 May 2011, p 29.

45   Department of Innovation, Industry, Science and Research, Submission 219, p 37.

46   *Committee Hansard*, Canberra,4 March 2011, p.93.

is owned by CSIRO and managed by AARNet. The next leg of that is from Geraldton down to Perth, which is part of five blackspots that were announced. AARNet will have an IRU—an ownership— over that link, as well as NextGen and the NBN. That will give us the ability to connect to there and then from Perth to Geraldton and from Perth across to Sydney we run that on the AARNet backbone. So, basically, we will be providing very high capacity.[47]

1.76   When DIISR appeared before the Committee again, Ms Lansdown agreed that the telecommunications infrastructure to support the SKA was already in place.

> **Mr FLETCHER:** Just to make sure I am understanding this correctly, if the link from Geraldton has been built and the rest of it uses existing backbone, if there were no further expenditure on the NBN would the telecommunications infrastructure which is required to support the SKA be there?
>
> **Ms Lansdown:** If you assume that we are going to compress the data before we move it from Perth and the most likely path for that is the AREN path, which is a 10-gigabit network, the answer is yes.[48]

1.77   Coalition Members therefore do not accept the argument that the NBN is a requirement for the SKA to proceed.

1.78   Ms Lansdown also agreed that there was no requirement to build 10 million fibre optic connections to homes (the major contributor to the cost of the NBN) to support the SKA.

> **Mr FLETCHER:** You are not putting it to us, so I presume that the 10 million connections in the access network are required to support the SKA?
>
> **Ms Lansdown:** No, I do not think I have.[49]

c. NBN is not the only way to achieve the benefits of broadband

1.79   The Rudd-Gillard Government has sought to give the impression that there are only two positions you can take: you either support the NBN and its network design, or you oppose broadband. Of course, that is nonsense. There are many alternative, cheaper network designs and funding

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47   *Committee Hansard,* Canberra, 27 May 2011, p 27.
48   *Committee Hansard,* Canberra, 6 July 2011, p 3.
49   *Committee Hansard,* Canberra, 6 July 2011, p 3.

arrangements which deliver the benefits of high speed broadband but at much lower cost to the taxpayer than the NBN.

1.80   One example is the approach being used in Britain. This was explained by Dr Tim Williams, including the balance between private sector funding and public spending.

> **Dr Williams:** The UK position is that by 2014 two-thirds of the UK residents will receive fibre to the premises. There is a caveat, which is that half that is currently copper for the last mile, as it were, but will be replaced incrementally. That is by largely BT-private sector — which is a privatised utility from 25 years ago — and other private sector deliverers working there, so two-thirds is effectively a private sector result. The final third is where the problem is in most parts of the world, it seems to me, and that is now requiring special attention by the central government who are putting in, at the moment, half a billion dollars to try to incentivise deals between the local communities and the private sector to try to make that happen. It is largely fibre based that they are going for, except with the final third the government has said that it will be technologically neutral, that is, that it will support fibre to a community centre, as it were, through the BT route and then, beyond that, whatever can be achieved in a mix of technologies and they will put some incentive money into that.[50]

d. NBN will not automatically deliver higher take up or lower prices

1.81   Some submissions assumed that by delivering higher speeds NBN will achieve higher broadband take up. A good example was the citing by the Department of Broadband, Communications and the Digital Economy of e-government in Denmark.

> Denmark is considered by the OECD to among the best in Europe in terms of the sophistication in e-government services with 84 per cent of the 20 basic services for citizens on line. This is supported by Denmark's performance as a leader in terms of broadband penetration and frequent internet users.[51]

1.82   DBCDE is evidently arguing that the best way to emulate Denmark's performance in e-government is to increase broadband penetration in Australia towards the levels which apply in Denmark. That argument is

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50   *Committee Hansard,* Sydney, 29 April 2011, pp 14-15.

51   Department of Broadband, Communications and the Digital Economy, Submission 215, p 23.

plausible – but DBCDE provides no evidence for its assumption that rolling out the NBN will be effective to increase broadband penetration. Denmark offers no support for DBCDE's assumption: OECD statistics show that as at 30 June 2010, of the 37.7 broadband services per 100 persons in Denmark, only 4.7 are fibre, with the clear majority being DSL.[52]

1.83   Other submissions assumed that NBN will deliver lower broadband prices. DIISR was one example.

> Currently, many regional and remote SMEs have limited growth potential due to a slower uptake of online technology than in metropolitan areas. This is mainly due to the difficulty in obtaining connection to these services at a reasonable price. The NBN has the potential to break down this barrier and allow an increased uptake of online technology.[53]

1.84   DIISR may be right that high broadband prices are holding back take up in rural and remote Australia. But there is no basis for its assumption that NBN will deliver lower broadband pricing.

e. Benefits will not come automatically

1.85   Many witnesses made the point that the NBN is not a 'silver bullet'. The benefits that its champions claim will not occur automatically as a result of building the NBN. Industry body Communications Alliance made this point clearly.

> **Mr Stanton:** As I said, the network in itself will not achieve everything that we are looking for in terms of digital economy development, because unless there is a reason to connect and to use it at high speed people will not. They will need applications and they will need the opportunity to take advantage of what the network can provide, but at the end of the day it is a layer 2 network. The magic is above layer 2.[54]

1.86   Dr Tim Williams pointed out that the NBN will not, of itself, lead to the delivery of government services over the internet.

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52   OECD Broadband Portal,
     http://www.oecd.org/document/54/0,3746,en_2649_34225_38690102_1_1_1_1,00.html,
     accessed 19/8/11.

53   Department of Innovation, Industry, Science and Research, Submission 219, p 18.

54   *Committee Hansard*, Sydney, 29 April 2011, p 34.

> The second thing that is very much in the report is that a lot of this is not automatically going to happen as a consequence of just providing a highway. It is really about trying to make sure that at least what is under public control, either at central or local government, really understands what this can do to services that they deliver.[55]

f. Oversold: the gap is not as great as is claimed

1.87   Part of the case for building the NBN is that Australia's broadband infrastructure today is hopelessly inadequate. As evidence to the Committee demonstrated, the picture is more complex. It is clear that many residential customers do not get adequate fixed line broadband. But many do; and many businesses, hospitals, schools, universities and other institutions already have high bandwidth connections.

1.88   This point was made by DBCDE:

> **Mr Rizvi:** As you would be aware, Mr Fletcher, quite a large proportion of hospitals are probably already connected to fibre, and schools to a lesser degree. Large businesses have often invested in fibre.[56]

1.89   A good summary of the position in the education sector was provided by the Australian Information and Communications Technology in Education Committee (AICTEC).

> Broadband connectivity within the education sector is improving. The higher education sector is generally well served by a high speed broadband network. The vocational education and training (VET) sector has a high degree of fibre connectivity but a wide range of line speeds ranging from less than 4 megabits per second (Mbps) to over 100Mbps. An increasing proportion of schools are connected to fibre and line speeds are improving but they remain varied, ranging from less than 4Mbps to over 100Mbps.[57]

1.90   AICTEC reported that a survey by the Commonwealth Department of Education found that 63.4% of schools (there are approximately 10,000 in Australia) had a fibre connection in 2010.[58] This suggests that a program to

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55   *Committee Hansard*, Sydney, 29 April 2011, p.13.

56   *Committee Hansard,* Canberra, 27 May 2011, p 57.

57   Australian Information and Communications Technology in Education Committee, Submission 124, p 2.

58   Australian Information and Communications Technology in Education Committee, Submission 124, p 10.

prioritise connecting all other schools to fibre could be carried out relatively quickly and cheaply.

1.91   DBCDE presented evidence that 4.4 million premises in Australia could receive speeds of at least 9.4 Mbps from ADSL2+ and a further 3.66 million premises could receive speeds of at least 3 Mbps.[59] Its submission also stated that a speed of 4-5 Mbps was sufficient for high definition video using MPEG-4 compression.[60]

1.92   DBCDE were asked to provide a supplementary submission updating these numbers by including the number of Australians who can receive a cable service from Telstra or Optus, given that these networks are capable of delivering speeds of up to 100 Mbps.[61] DBCDE declined to provide this data.

1.93   Some witnesses who appeared before the Committee have high speed broadband connections today. For example, Mr Tony Clark of Rising Sun Pictures, a film and television animation visual effects company in Adelaide, told the Committee of his company's very impressive achievements in delivering animation products all around the world using the internet. Mr Clark explained that Rising Sun already has a fibre connection.

> **Mr FLETCHER**—I want to check a couple of things. The impression I got from what you have said is that to date you have been able to connect with your customers on fibre or other high-bandwidth networks—is that correct?
>
> **Mr Clark**—That is correct but that is principally because we have built them ourselves.
>
> **Mr FLETCHER**—Presumably though it made economic sense for you to do that?
>
> **Mr Clark**—Bearing in mind that we were bootstrapped by a significant investment by the state government of South Australia which enabled us to build that, yes, absolutely.[62]

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59   Department of Broadband, Communications and the Digital Economy, Submission 215, p 91.

60   Department of Broadband, Communications and the Digital Economy, Submission 215, p 93.

61   Telstra's and Optus' networks pass respectively 2.5 million and 1.4 million homes, and are capable of delivering speeds of 100 Mbps. Telstra already delivers these speeds over its cable network in Melbourne; in other locations these speeds could be delivered with relatively minor upgrades.

62   *Committee Hansard,* Adelaide, 4 April 2011, p 23.

6. NBN's central premise – overwhelming demand for FTTH – is wrong

1.94   The third conclusion from this inquiry is that the NBN plan is based on a false premise. There is no overwhelming demand for high speed fibre to the home broadband. On the contrary, demand is weak and interest is low. This appears related to the fact that very few applications have been demonstrated which actually need the speeds of 100 Mbps or 1 Gbps which the NBN is being engineered to deliver.

1.95   In the limited number of cases where we saw applications which could justify higher speeds than can be delivered over today's networks, they were not applications which would typically be delivered to homes. In other words, there may be a case to connect fibre to key institutions such as schools. However, no case has been made to connect fibre to around 10 million residential premises in Australia.

a. Troubling indicators of weak demand

Disappointing early takeup

1.96   The Committee visited locations where the NBN has been rolled out. Take up is disappointingly low.

1.97   In Scottsdale, Tasmania, 70 per cent of homes have agreed to be connected to the network.[63] In other words, 30 per cent have declined – even though connection is free. Committee members were advised by employees of NBN Tasmania, during our discussions with them, that take-up of a paid service was only around 15 per cent. The local council has not taken a service.[64]

1.98   An Internet service provider involved in the NBN trials in Tasmania, iiNet, indicated its view that take up cannot just be left in the hands of the internet service providers.

> **Mrs PRENTICE:** You mentioned and acknowledged our concerns in Scottsdale in Tasmania where there was not the take-up that we would have hoped for. Whose role do you see as promoting the importance of take-up? Is that something you as a retailer should be involved in?

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63   *Committee Hansard,* Launceston, 10 March 2011, p 4.
64   *Committee Hansard,* Launceston, 10 March 2011, p 4.

> **Mr Dunstan:** I think both pillars are very important and the ability of NBN to continue to build the brand and build the education is really important. ISPs on their own will find it difficult to build the education about what, how and why of the NBN.[65]

Limited number of submissions

1.99   The Committee received 235 submissions and 17 supplementary submissions.[66] This is a surprisingly small number of submissions for an inquiry into an infrastructure project which is supposedly addressing huge unmet demand. As a comparator, the 1996 Senate Inquiry into the sale of Telstra received 634 submissions – nearly three times as many.[67]

Evidence of lack of interest

1.100   There was evidence provided to the Committee, by a range of witnesses from a number of different sectors, that small business and other sectors have little interest in or awareness of broadband and the NBN.

1.101   Philippa Forrester, Chair, McLaren Vale Grape, Wine and Tourism Association, gave evidence to the Committee about the potential impact of the NBN in her region. She commented that 'many of the small businesses did not really think that it was going to make a difference to them.'[68] She added that in her experience 'farmers generally do not even think about broadband.'[69]

1.102   Mr Thomas Laing, Secretary, Willunga Business and Tourism Association, gave a telling example of the lack of demand for broadband applications by small businesses in his area.

> **Mr Laing** - We have a developer in McLaren Vale Mark Potter who has done an iPhone app for tourism. The uptake of that in Willunga has been very slow. People are not knocking on his door and saying, 'Yes, yes, please.' It is, 'We'll wait and see.'[70]

1.103   Awareness is low even in Tasmania where the NBN's first rollouts have occurred, as Digital Tasmania noted.

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65   *Committee Hansard,* Perth, 5 May 2011, p 8.

66   http://www.aph.gov.au/house/committee/ic/NBN/subs.htm, accessed 22/8/11.

67   http://www.aph.gov.au/Senate/committee/ecita_ctte/completed_inquiries/1996-99/telstra/report/e01.htm, accessed 13/8/11.

68   *Committee Hansard*, Victor Harbor,5 April 2011, p.39.

69   *Committee Hansard*, Victor Harbor,5 April 2011, p.39.

70   *Committee Hansard*, Victor Harbor,5 April 2011, p.50.

> Awareness has been rather lacklustre outside the first three towns.
> NBN and fibre-optic are sort of name dropped at every
> opportunity by the state and federal governments, but people are
> not really told what that means to them and what it is going to do
> for them in the real world in real terms.[71]

1.104   RDA Tasmania also revealed that it was finding little interest from
         Tasmanian businesses in NBN. It had issued a survey concerning the NBN
         to all 1500 stakeholders in their database, across Tasmania, and obtained
         two responses.[72]

1.105   This does not suggest strong demand for or enthusiasm about the NBN.
         Nor does the following exchange with Mr Perkins of RDA Tasmania:

> **Mr FLETCHER**—Let me put the question another way: how many
> businesses can you specifically identify—I am not asking for their
> names but the number of businesses—that you have spoken to in
> the last six months who have identified things that they are
> planning to do with an improved broadband network
> infrastructure?
>
> **Mr Perkins**—I could not give you an answer.[73]

1.106   Take up of broadband by Tasmanian tourism businesses is low, the
         Committee was told by RDA Tasmania.

> I think that tourism businesses historically have not been as open
> to getting online, whether it be a website or it be having their
> details stored in this database. A lot of tourism businesses are bed
> and breakfasts or semi-retired type arrangements, so they are
> happy with the status quo and they are not as interested in
> growing their businesses. Therefore they do not see the need to get
> online or to open up to multiple distribution channels.[74]

1.107   Nationally the picture appears similar, according to a survey recently
         commissioned by the federal Department of Resources, Energy &
         Tourism. The survey found that 84 per cent of tourism businesses had an
         on line presence, but only 35 per cent had online booking and payment
         facilities.[75] This suggests that e-commerce in tourism is more likely to be

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71   *Committee Hansard*, Launceston, 10 March 2011, p.20.
72   *Committee Hansard*, Launceston, 10 March 2011, p.36.
73   *Committee Hansard*, Launceston, 10 March 2011, p.37.
74   *Committee Hansard*, Launceston, 10 March 2011, p.31.
75   Department of Resources, Energy & Tourism, Submission 190.1, p 2.

stimulated by a program to assist tourism businesses with their on line transaction capabilities than by giving them higher speed access.

1.108   When asked about engagement by local small and medium businesses with broadband and its potential, Mr Jeremy Moffat, Managing Director, North Queensland Telecom, noted a general lack of engagement:

> **Mr Moffat**—I just do not think they are. I think there is generally a lack of awareness through small business. I have attended a couple of forums where the question is continually asked: what will the NBN mean to me? What can I do that I cannot do now?[76]

1.109   The message was reinforced by Mr Peter Read, IT Consultant at the North Queensland Small Business Development Centre. He stated that small businesses had a low online presence and did not know who to approach. Without education, he did not expect their online presence to change much.

> **Mr Read**... If we do not do that, I do not think there is going to be a lot of change, except that techos will be saying, 'Yes, it's faster!' [77]

1.110   A similar point was made by Mr Darren Alexander of Tasmanian ICT.

> It is important to advise and educate the SME market in Australia…After all, there is no point putting a five-lane freeway between two small towns if no-one is going to drive on it.[78]

1.111   The evidence of limited interest in broadband makes Coalition Committee Members sceptical that the NBN will magically change the way small business operates. Evidence from Scottsdale, where the NBN is already operating adds to that scepticism. Small business owners appearing before the Committee were unable to point to ways in which it has changed their business operations.

> **Mr FLETCHER**—I am asking you both this in your capacity as business owners and operators. Can you think of things that you are now doing differently in engaging with your customers, for example, because you have NBN or because more customers have an internet connection?
>
> **Mrs Hall**—I cannot think of anything.[79]

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76   *Committee Hansard*, Townsville, 19 April 2011, p.24.
77   *Committee Hansard*, Townsville, 19 April 2011, p.30.
78   *Committee Hansard*, Hobart, 11 March 2011, p.51.
79   *Committee Hansard*, Launceston, 10 March 2011, p.17.

b. Failure to demonstrate need for FTTH speed

1.112   The single most striking conclusion from this inquiry is that there were very few persuasive examples given of applications which actually require the speeds that the NBN will deliver.

1.113   The Committee was provided with many fascinating and encouraging examples of applications which could be delivered if there was widespread availability of high speed broadband services.

1.114   There was however a conspicuous lack of evidence of a need for applications needing the speeds that a FTTH network can deliver (100 Mbps) as opposed to speeds of say 10-20 Mbps which can be delivered over existing DSL and HFC networks to many Australians.

1.115   Some witnesses effectively argued that the applications which would require 100 Mbps are not yet known. This view was put by the CSIRO for example.

> The future transformative impact of broadband communications, including internet access, is, to some extent, unknown.[80]

1.116   Coalition Members welcome the intellectual honesty of this submission. We are not persuaded however that it makes sense to spend so many billions of taxpayers' money on a venture the impact of which is unknown.

1.117   The failure to demonstrate specific applications requiring 100 Mbps was notable in many different fields of activity.

Telemedicine

1.118   Many telemedicine examples provided to Committee did not require the speeds that NBN will deliver; often they could be readily delivered over today's networks. The Committee was provided with a good example by Intel-GE Care Innovations.

1.119   Dr George Margelis from Intel-GE appeared before the Committee and described a trial of health monitoring equipment, conducted in 2010, involving 50 elderly patients receiving in home nursing care from Hunter Nursing.

> We delivered a little white box into their home, which for all intents and purposes was a small computer but was designed to be used by someone who did not know anything about computers.

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80   CSIRO, Submission 171, p 3.

> So, the classic patient had never used a computer before in their life and had never had to worry about those sorts of things. This device spoke to them, gave them very large onscreen prompts, took them through a process of healthcare delivery and enabled them to also communicate with their healthcare provider remotely. So, the nurse sitting at her desk at Hunter Nursing could videoconference to this patient and discuss their health concerns. They could get information about their blood pressure, weight, blood oxygen, general wellbeing and actually ask the patients questions about how they felt, and it did all that quite simply.[81]

1.120   Dr Margelis was asked what speed this application requires; his answer revealed that it needs very much less than the 100 Mbps the NBN is being engineered to deliver. The required speed is 512 Kbps – that is, one two hundredth of 100 Mbps.

> But at least 256K; 512K would be better. Once you start getting up to one and two megabits we actually find that the technology no longer becomes an issue and we then start hitting constraints of the hardware.[82]

1.121   For this reason, Coalition Members of the Committee deplore the fact that NBN Co claims, incorrectly, that the Intel Health Guide it is an application which requires the NBN. This claim appears in a fact sheet available on NBN Co's website, headed: 'Case Study: Healthcare - chronic illness; Remote care helps patients stay out of hospital.'

1.122   The fact sheet says:

> As Australia's population ages, the pressure on health services to support sufferers of chronic illnesses, such as heart conditions, is on the rise. The National Broadband Network (NBN) can help alleviate some of these pressures by enabling in-home health solutions such as the Intel Health Guide. Trials show the Intel Health Guide delivers improved patient outcomes. With an NBN, these services could be delivered to homes across the country.[83]

1.123   It is notable that many submissions claimed that NBN would facilitate remote monitoring and diagnostics, for example, the submission from DIISR.

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81   *Committee Hansard*, Sydney, 29 April 2011, p.45.

82   *Committee Hansard*, Sydney, 29 April 2011, p.48.

83   http://www.nbnco.com.au/assets/case-studies/case-study-healthcare-intel-hunter-apr-11.pdf, accessed 15/8/11.

> Medical devices, services and software for remote prevention, monitoring and treatment interventions over the NBN could include blood pressure, glucose level, heart rate, weight, incontinence and falls monitors and chronic disease treatments (e.g. for dialysis and cardiac conditions).[84]

1.124 These kinds of monitoring functions are the kind carried out by the device used in the Hunter Nursing trial – which as has been seen requires speeds much lower than those the NBN is engineered to deliver.

1.125 Coalition Members are bemused by the discussion in the Committee's Majority Report about the Hunter Nursing trial, and the failure to make reference to Dr Margelis' answer about the speeds required.

1.126 Coalition Members were struck by the inability of witnesses to demonstrate a need for the speeds which the NBN is being engineered to deliver. For example, the Department of Health and Ageing was not able to give a view as to the minimum speed that is required for telemedicine. A representative of the Department was unable to even tell the Committee the speeds that would be required to provide real-time high definition video for telemedicine.[85]

1.127 In a supplementary submission, the Department sought to answer the question posed by the Committee – 'Could you give us some of the examples of what you might see as the top end utilisation of telehealth that a specialist and GP might be looking at and what you would see as the required speeds and widths for that sort of service'.

1.128 In its response, the Department cited from a June 2010 report by NICTA for the Department of Broadband, Communications and the Digital Economy 'Telemedicine in the context of the National Broadband Network' which it quoted from as follows:

> There are very few studies addressing the minimum or maximum clinical requirements for video (although some standards exist for medical imaging). As yet, it is not determined what video specification is necessary for each clinical (or non-clinical) application. It is also not clear at what point 'enough bandwidth' provides sufficient fidelity.[86]

1.129 Conversely, witnesses before the committee readily agreed that there are plenty of useful telehealth applications which can be delivered at speeds

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84 Department of Innovation, Industry, Science and Research, Submission 219, p 10.

85 *Committee Hansard*, Canberra, 4 March 2011, pp.29-30.

86 Department of Health and Ageing, *Submission 212.1*, p.2.

well below those proposed for NBN. Mr Chesworth from DIISR, for example, acknowledged this point.

> **Mr FLETCHER:** I presume you are not putting to us that unless there is ubiquitous, for example, 30 megabits per second there are no useful telehealth applications?
>
> **Mr Chesworth:** That is correct.[87]

Education

1.130   The Australian Council for Private Education and Training was not able to provide the Committee with data as to the speed of a connection that a student needs to have for them to be able to participate in e-learning applications.[88]

1.131   Representatives of Open Universities Australia were asked about a statement in their submission that 'current demand is already at the maximum physical capability'?[89] Did this mean, for example, that they could not deliver two way video tutorials to students with an ADSL connection:

> **Mr FLETCHER**…Are you putting to us that your technical experience has been that you cannot use ADSL over the copper for that kind of scenario?
>
> **Mr Hamilton**—I do not know that I could be that precise.
>
> **Ms Engwirda**—We could not be that specific.

1.132   Open Universities Australia were invited to come back to the Committee with further information to expand upon the statement in their submission and explain what they meant by it. They did not do so.

Business

1.133   The Committee was repeatedly provided with examples of applications which it was claimed would deliver business benefits as a result of the NBN – but which in fact did not require a fibre connection.

1.134   In its submission DIISR pointed to the benefits of computerised foot scanners in retail stores.

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87   *Committee Hansard,* Canberra, 6 July 2011, p 5.

88   *Committee Hansard*, Canberra, 4 March 2011, p.44.

89   *Committee Hansard*, Melbourne, 18 March 2011, p.12.

> For example, a Footwear Manufacturers' Association of Australia
> consortium that includes RM Williams and J. Robins and Sons has
> recently received Commonwealth funding to develop a mass
> customisation model for footwear manufacturing that will more
> effectively meet the needs of individual customers. Computerised
> foot scanners will be introduced into RM Williams' network of
> over 40 retail stores, with the information then relayed via the
> Internet to Australian production facilities to quickly and
> efficiently produce footwear to meet individual customer needs.[90]

1.135   DIISR acknowledged that this application was not one which helped make
          the case for the NBN. It did not require direct data transmission to homes,
          and even between the stores concerned the data transmission
          requirements were low.

> **Mr FLETCHER:** On page 25 you talk about computerised foot
> scanners to be introduced into 40 retail stores. I just want to
> understand the argument being made here in terms of the case for
> the NBN. Is it proposed that this data will also be provided to
> households?
>
> **Mr Lawson:** It has not been put as a case to justify the NBN. It has
> been put as a case for some of the uses.
>
> **Mr FLETCHER:** Sure, but the policy question before us is the uses
> of the incremental bandwidth and network which is proposed.
>
> **Mr Lawson:** In that particular case you would not expect there to
> be any aspect to the home.
>
> **Mr FLETCHER:** Do we have a sense of the volume of data that is
> involved in a foot scanner?
>
> **Mr Lawson:** No, that is very small.[91]

1.136   In areas where the NBN has already been built (such as Scottsdale) the
          evidence of business and economic benefits is scant (apart from the short
          term benefits of construction activity).

> **Mr FLETCHER—**I want to make sure I am understanding
> correctly what you are saying about the economic benefits that the
> town has seen. You mentioned that a couple of people in the IT
> sector have moved into the town from other parts of Australia but,
> for example, there is nothing specific going on right now in terms

90   DIISR, Submission 219 , p 25.

91   *Committee Hansard,* Canberra, 6 July 2011, p 4.

of e-medicine. Are there any other tangible economic benefits you would point to right now that the town has achieved as a result of the NBN coming?

Mrs Mercer—When I was talking about the economic development side of things, it was the short-term benefit to the community of having over 200 people living, eating and breathing in our community. That assisted the shop owners to keep open because we were going through an extremely tough period because tourists do not come in winter. It certainly helps our community survive.[92]

Government Services

1.137   The Department of Finance cited a survey showing that 54% of citizens with a broadband connection say that they their preferred method of contacting government is using the internet, compared to only 16% of those who do not have broadband.[93]

1.138   This is an interesting statistic which might well be persuasive evidence of the importance of increasing broadband take up; but it does not demonstrate that offering higher bandwidth will increase take up.

1.139   Communications Alliance pointed to the capacity to file tax returns on line, but agreed this could be done with the speeds available in the network today.

> **Mr Stanton:** Certainly filing an online tax return is not a particularly bandwidth intensive exercise. If you had an ADSL-type connection you could certainly do it. The proportion would be at least those in Australia with ADSL capability. If you were an extraordinarily patient person you could probably get one through on dial-up, but that is an example where the development of the e-government application has generated benefits and does not rely on having 100 megs. It relies on concerted government action to make these things happen.[94]

c. Failure to demonstrate need for FTTH speed to 10 m premises

1.140   A related issue is the question of why the NBN needs a direct fibre connection to some 10 million premises.

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92   *Committee Hansard,* Launceston, 10 March 2011, p 10.
93   Department of Finance and Deregulation, Submission 166, p 3.
94   *Committee Hansard,* Sydney, 29 April 2011, p 34.

1.141   Where the Committee was provided with examples of educational applications requiring high speed connections, these typically were connections to schools or universities or hospitals rather than connections to homes. This suggests that the policy benefit could be obtained through connecting a much smaller number of institutions (for example, the 10,000 schools in Australia) rather than 10 million homes.

1.142   DIISR quoted the example of a distance education application for high school science students – one which would require high speed connections to schools and hospitals, but not a high speed fibre connection to homes.

> **Prof. Durant:** ..In the area of education and learning, we have been talking with one of the heart surgeons at Royal Prince Alfred Hospital about doing live heart operations for school groups through Questacon. It is based on a program called Cardiac Classroom, which is being run out the Liberty Science Centre in New Jersey. They have done over 200 live operations to secondary school groups as part of their educational and health related functions. Again, you need the high bandwidth and the latency to be able to interact with the surgeons.[95]

1.143   Similarly, AARNET offered an example of an application to a school that requires 10 Mbps.

> **Mr Hancock:** … But we still take to public schools what we call a geodome. When you were young, you had a planetarium. The geodome is 10 metres by 10 metres by four metres high. It is like a blow-up jumping castle. The kids walk inside and lie on the floor. They basically see the solar system and some packages that we get from NASA.[96]

1.144   When Dr Tim Williams in his report highlighted benefits in health in the UK, these benefits were secured because of connections to hospitals and other health sites.

> **Mr FLETCHER:** …You talk about the image exchange portal on page six of your submission. Am I right in thinking that runs between hospitals, clinics and so on?
>
> **Dr Williams:** Yes. The cost saving is one of the issues because it used to have to be burnt onto a disk. Frankly, it is a remarkable saving, so the answer is yes to that.[97]

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95   *Committee Hansard,* Canberra, 6 July 2011, p 7.

96   *Committee Hansard,* Sydney, 29 April 2011, p 13.

97   *Committee Hansard,* Sydney, 29 April 2011, p 15.

1.145   Similarly, his examples concerning education related to the benefits of connecting schools to the network.

> **Mr FLETCHER:** You have talked about the benefits of broadband in education and again I presume that is based upon connections to schools.
>
> **Dr Williams:** Yes.[98]

1.146   DIISR pointed to an application called Labshare as an example of what the NBN would facilitate.

> An example of the way the NBN can be leveraged in the ways noted above is through Labshare, a program run through the University of Technology Sydney (UTS) that provides students in upper secondary and at the tertiary level with access to a number of remote control experimental apparatus including structural visualisation and loaded beams.[99]

1.147   Labshare's website indicates that its operational model is to share laboratories over the internet between institutions – not to homes.

> The Labshare Institute is a not-for-profit organisation established to provide service to a national network of shared remote laboratories.[100]

1.148   As part of its field activities and inspections in conjunction with its inquiry, the Committee was hosted by the University of Melbourne and its associated Institute for a Broadband-Enabled Society (IBES). Members were impressed by the scope and potential of a range of demonstrations in the areas of education and medicine.

1.149   In its submission to the Committee, the University of Melbourne outlined the potential uses of broadband applications in education and medicine in the higher education sector – including tele-presence applications and virtual collaboration spaces. The University spoke of:

> Fully immersive 3D virtual reality learning environments with haptic (force feedback) capabilities that allow practice and rehearsal of complex procedures. For example, researchers at the MUVRS laboratory at The University of Melbourne have developed haptic-enabled immersive environments that can be

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98   *Committee Hansard,* Sydney, 29 April 2011, p 16.

99   Department of Innovation, Industry, Science and Research, Submission 219, p 14.

100 http://www.labshare.edu.au/corporate/institute, accessed 15/8/11.

used to train surgeons so they can experience giving an operation prior to practicing on real patients.[101]

1.150   The Committee witnessed demonstrations of a range of 'over the horizon' applications including robotic and remote surgical applications, remote dentistry, a remote rehabilitation device, aged care monitoring and advanced tele-conferencing applications.

1.151   Against the background of the University's broadband vision and its demonstrated applications, Coalition Members endorse the view that high-speed broadband, regardless of which mode is applied, has a clear application to education and tele-medicine.

1.152   Coalition Members authors express the concern that the demonstrated applications (and doubtless others from similar broadband-enabling research groups) are not yet at the stage of being practical on-the-ground applications. It is of little value unless the research is applied universally and early as high speed broadband is rolled out. While fibre optic connections may be the ideal, and while a number of provincial educational organisations and hospitals may already have fibre access, the object should be a ubiquitous service which includes hospitals in country towns, cottage hospitals and bush-nursing centres.

1.153   The Committee noted, in response to a question to IBES personnel, that the demonstrations witnessed by the Committee, utilised a maximum speed 20Mbps. Coalition Members note that if even such 'over the horizon' applications do not use anything like the 100 Mbps which the NBN is engineered to deliver, it further underlines the point that there was a failure to demonstrate the applications which require such speed and which will drive take up to millions of homes.

1.154   If a rollout of fibre and wireless to hospitals and other health institutions is occurring, it is unlikely to deliver the expected benefits unless Commonwealth and State Governments ensure a training strategy is put in place so that medical staff are up-skilled to utilise and handle new high speed technologies. Coalition Members would recommend such training programs be instituted by Commonwealth and State Governments, as any such rollout occurs, in regional, rural and remote hospitals and nursing centres, and that they address the delivery of interactive medical, dental, aged care and rehabilitative services.

101 University of Melbourne, Submission 120, p 5.

d. Witnesses called for higher speeds – but few showed a need for fibre

1.155   Many witnesses before the Committee spoke of their particular projects and activities, and how they believed improved broadband could assist them. In many cases, though, witnesses conceded that they did not have an understanding of exactly what speeds they required, or the technology needed to deliver such speeds.

1.156   Witnesses from the Inspire Foundation, which works to combat depression in young people, after talking about their desire to offer two way video chat, acknowledged that they were not putting a specific view about speed or technology.

> **Mr NEVILLE:** ... Do you know what speed you will need for that?
>
> **Mr Hosie:** I do not have that knowledge.
>
> **Mr NEVILLE:** Have your technical people said that to you?
>
> **Ms Stace:** No, not specifically. But we look at the broadband and the speeds the broadband is promising and they seem well within the range of being able to offer that type of service.[102]

1.157   Ms Little from the Australian Library and Information Association spoke about internet access at Gunghalin library using 'sound domes' to allow people for example to use Skype, but declined to cite a specific speed or technology:

> **Ms Little:** …We have set up in the new Gungahlin library really funky-looking sound domes that are connected to the internet…
>
> **Mr NEVILLE:** What sort of speed do you need for that?
>
> **Ms Little:** Now you are asking a technical question. I might pass over to—
>
> **Mr NEVILLE:** I am not trying to be tricky with this question. We are talking about people having services now of about three, four, five or six and we are talking about wireless going up to 12 and perhaps in time to 20. But what sorts of speeds do libraries need?
>
> **CHAIR:** Do you want to take that on notice and come back to us?
>
> **Ms Little:** Yes.[103]

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102 *Committee Hansard,* Canberra, 27 May 2011, p 13.
103 *Committee Hansard,* Canberra, 27 May 2011, p 19.

1.158 Tasmanian Farmers similarly wanted more speed – but did not specify exactly what speed or technology they sought.

> **Mr FLETCHER**…You are not, however, putting to us a specific view on precisely what speed is required or precisely what technology is required—I think that is right, isn't it?—just that it should improve.

> **Ms King**—Something that is adequate, as you can understand, if you are going to start downloading pictures.[104]

1.159 The Australian Medical Association indicated that they wanted faster speeds more widely available – but were not making a specific call for any particular speed or technology.

> **Mr FLETCHER**—Again, I just want to understand if I am capturing properly what you are putting to us. Is it a fair summary of your position that you are not putting to us a particular view about fibre versus copper versus satellite; you are really saying that what you are interested in is: (1) having sufficient speed to deliver the services or practice the way you want to and benefit patients the way you want to; and (2) trying to level things up so that those who are conspicuously behind, in terms of the speeds they get, are not so far behind?

> **Dr Hambleton**—Once again, I think that is a fair summary. We would like to see a big pipe. We do not care how it gets there, as long as it is big and it has lots of water in it.[105]

1.160 The National Rural Health Alliance, who appeared before the Committee on 4 March 2011, were asked about the specific speeds they felt were necessary, and undertook to make further investigations on this point. Their supplementary submission reported on their investigations as follows.

> Dr Jenny May's inquiries indicate that most of the Hunter New England Health (HNEH) network (which includes the Tamworth hospital she referred to in her evidence) is connected by fibre, on speeds of 10 MB/s to 1 GB/s. There are still some existing copper and ADSL connections in the network running from 4 MB/s to 10 MB/s.

> However, the main interest in the NBN in such rural settings is in improving traffic when it leaves the regional health network, for

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104 *Committee Hansard,* Launceston, 10 March 2011, p 47.
105 *Committee Hansard,* Canberra, 4 March 2011, p 21.

example when a GP wants to access images from the hospital in his or her rooms, or when someone in the health network connects to an external videoconferencing unit to contribute to a case conference.

At present a rural clinic may have 128 kb/s or 512 kb/s asymmetrical connections, but an upgrade to 4 MB/s would enable the local Nurse Practitioner and a visiting GP to work on-site, entering patient notes and working from their clinic records.[106]

1.161   The submission also noted that videoconferencing would require speeds of between 8 and 20 Mbps. It is noteworthy that the speeds cited in both the previous paragraph and this paragraph are well short of the speed which the NBN is designed to deliver over fibre.

e. Witnesses generally prioritised ubiquity over speed

1.162   Witness after witness, from sector after sector, made the point that a key benefit was ubiquity – that is, that a given broadband speed is ubiquitously available to households and businesses – and this was more important than the particular speed.

1.163   A good example is the perspective of the Australian Telecommunications Users Group, an organisation with long experience in contributing to public policy on telecommunications and broadband in Australia.

> **Mr FLETCHER:** On that important point, is it an implication of that that ubiquity of service or connectivity is one dimension and speed is another and distinct dimension?
>
> **Ms Sinclair:** Yes, it is. If you look through all of our papers we place heavy emphasis on ubiquity.[107]

1.164   Dr Jennifer May, Chair of the National Rural Health Alliance advised the Committee:

> Delivery of health information I doubt is particularly speed dependant but I think it is key, and that is that universality concept.[108]

1.165   This sentiment was echoed by Ms Sally Anne Thompson, CEO of Adult Learning Australia:

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106   National Rural Health Alliance, Submission 143.2, p 1.
107   *Committee Hansard*, Sydney, 29 April 2011, p.41
108   *Committee Hansard*, Canberra, 4 March 2011, p.9.

> **Ms Thompson**—I must admit that when it starts to get into the details of the speed it is beyond my expertise. I guess, as a general principle, I would say we are much more interested in the ubiquitousness than we are in the speed. If you had to choose between speed and ubiquitousness, we would always go with a lesser speed and broader coverage. So what excites us the most about the project is the ubiquitousness of it.[109]

1.166   A similar view was expressed by Dr Jill Abell, Director of IT, The Hutchins School:

> **Mr FLETCHER**—Is it also a fair summary of what you have been saying that as you think about your strategy for e-learning and serving students, the issue of greatest interest to you about the connection they will have at home is knowing that there is a uniform connection? In other words, you know that every student is going to have a particular connection and you can make that assumption as you do your planning. Is that a fair statement?
>
> **Dr Abell**—Yes, that is.[110]

1.167   Dr Terry Percival of NICTA also drew attention to the distinction between speed and ubiquity.

> **Mr FLETCHER:** … You underlined ubiquity. Can we take from that that you see benefits in ubiquity regardless of where the speed point happens to be set at?
>
> **Dr Percival:** Once the speed point is set above a certain level, yes. Examples include education.[111]

1.168   Dr Percival went on to indicate that a speed of 10 Mbps was what he had in mind as the 'certain level.'[112] This is a speed that many Australian premises receive today, and not one which requires fibre to the premises.

1.169   Mr Robert Walker, Chief Executive Officer, Agforce Queensland, put a similar view:

> **Mr FLETCHER**—… I right in thinking that some of the agricultural applications, like soil moisture monitoring and so on, do not so much require super-high bandwidth as they require the wider availability of a uniform bandwidth so that you can then,

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109 *Committee Hansard*, Canberra, 4 March 2011, p.52.
110 *Committee Hansard*, Hobart, 11 March 2011, p.47.
111 *Committee Hansard*, Sydney, 29 April 2011, p.57.
112 *Committee Hansard*, Sydney, 29 April 2011, p.57.

for example, deploy sensors in the knowledge that there will be a network for them to connect to?

Mr Walker — Yes, that is correct, whether it be soil moisture, whether it be remote monitoring of bores. Your point is correct. It is not about speed; it is about availability and general application.[113]

1.170   Mr John McGee, Chief Executive Officer, Tasmanian Electronic Commerce Centre also emphasised ubiquity.

Mr FLETCHER... I think what you are saying is that it is not a particular speed but it is ubiquity and the fact that every household has ubiquitously available a certain speed and therefore people developing applications, for example, can know that that is there. Is that a fair summary?

Mr McGee That is a true comment and that is the experience we have had in the ICT sector...[114]

1.171   Witnesses from the government sector also emphasised the importance of ubiquity rather than speed. Mr Andrew Mills, Chair, NBN Taskforce, South Australian Government commented:

Mr Mills - I think ubiquity is not talked about enough. It is not about getting broadband to people; it is about everybody having it.[115]

1.172   A submission from IT company SAIC spoke of the use of broadband networks to deliver government services, but noted that the applications do not need the kind of speed that NBN will provide. What is valuable is the ubiquitous availability of connections.

The majority of currently available systems do not need bandwidth capacity being constructed by the NBN; however, they all rely on universal access to modern network speeds...[116]

1.173   If ubiquity is the key benefit, this could be achieved at much less expense by achieving the ubiquitous provision of a speed that does not require fibre to the home. A number of witnesses made this point, including Mr Stanton of the Communications Alliance.

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113   *Committee Hansard*, Brisbane , 18 March 2011, p.43.
114   *Committee Hansard*, Hobart, 11 March 2011, p.72.
115   *Committee Hansard*, Adelaide, 4 April 2011, p.61
116   SAIC, Submission 35, p 3.

> **Mr FLETCHER:** I was also interested in your comments on page 5 about ubiquity and drawing a distinction between ubiquity, on the one hand, and bandwidth or speed on the other. That makes a lot of sense to me. Is there an implication that you could set a policy target to achieve ubiquity which is quite independent of the speed target that you choose?
>
> **Mr Stanton:** Certainly. You could, as a government, choose to say, as the Japanese have, that we will ensure that 100 per cent of the country has at least 30 megs or higher, recognising they had some previous investments. All of their new rollout is 100 meg, but they have said, 'The line in the sand for our country is 30 megs or higher.' Yes, they have pushed for ubiquity. They have used a very high speed network for the last piece of it, but they have decided that 30 megs is a functional number for those who do not yet have fibre to the home.

7. Better ways forward

1.174 Much of the evidence provided to the Committee suggested that there may be better (and certainly more cost-effective) ways to proceed than rolling out a fibre network to 93 per cent of premises.

1.175 For example a strategy of quickly connecting homes which are presently in broadband black spots may make more sense. It also may make good sense to concentrate on connecting key classes of institutions: schools, hospitals, libraries and so on.

a. Targeting rapid improvements to black spots

1.176 The NBN will not be completely rolled out until FY2021 (if it meets its rollout schedule; it will very likely run behind schedule given that it has missed key milestones to date.) This means a wait of a decade or potentially more for those many Australians have inadequate services today. For example, due to the widespread use of pair gain systems in Telstra's network ADSL is often not available.

1.177 A submission received by the Committee offers a good example of this problem – a graphic design business operating in a new subdivision where ADSL2+ is not available.

> I make the following submission as a small business owner needing fast and reliable broadband. I recently relocated from an

area where ADSL2 was available to a new subdivision where, at first, dialup was the only available connection. The pair-gain cabling which has been laid here does not support ADSL.[117]

1.178   The NBN strategy is essentially 'Super fast broadband arriving super slowly.' As this submission highlights, the interests of many Australians may be better served by a 'Get broadband fast' strategy of delivering ADSL2+ quickly to existing black spots, than by the NBN.

b. Targeting higher speeds to key institutions

1.179   Considerable evidence was received suggesting that many of the claimed benefits could be achieved if expenditure were concentrated on connecting key institutions such as schools, hospitals and libraries to fibre.

1.180   For example, Dr Jill Abell, Director of IT at The Hutchins School in Tasmania, informed the Committee of her school's use of IT in educating students. This did not depend on improved connectivity to students' homes.

> **Mr FLETCHER**—I am interested in the strategy of connecting schools, as opposed to the strategy of connecting homes. I think what I am hearing from you—correct me if I have it wrong—is that for your school the important thing was getting the very high speed connection to the school. The existing infrastructure that connects homes, where students and parents are, has been adequate because what you have been focused on has been the school connection. Is that a fair summary?
>
> **Dr Abell**—Yes, it is. The end-to-end performance between the school and the other organisations—other cultural research institutions around the nation and the world—facilitates the connectivity for the home.[118]

1.181   If the government's strategy were to deliver high speed connections to key institutions, libraries would be an obvious inclusion. Evidence from the Australian Library and Information Association highlighted the role of libraries in providing access to many people who cannot otherwise get broadband services.

> **Ms Little:** …Where we are seeing a really important role—and I guess I declare an interest in that I have Gungahlin library in my portfolio and that is an NBN area—is in providing that access to

117   Art When You Need It, Submission 37, p 1.
118   *Committee Hansard*, Hobart, 11 March 2011, p.47.

services much better. So, if the NBN is brought into my library at
Gungahlin, the people who cannot afford to have the broadband
to their home at the moment or who do not understand it and are
quite nervous about it can come into my library and receive and
access and training on how to use it.[119]

1.182   Witnesses from the ALIA were clear in calling for libraries to be connected
as a priority.

> **Mr FLETCHER:** Is it fair to say that you argue that to maximise
> the effectiveness and accessibility of a broadband policy strategy it
> makes sense to focus on particular types of institutions to connect
> to as a priority, and that libraries would be one of those types of
> institutions?
>
> **Ms Hutley:** Very much so.[120]

1.183   Another obvious class of institution would be hospitals. NSW Health
pointed out the priority of connecting all hospitals in NSW to a secure
broadband network. Its submission cited '…Recommendation 51 of the
Garling Report, for the establishment of 'a high speed broadband
network….securely linking all public hospitals in NSW so as to enable the
provision of specialist clinical services and support via the network from
metropolitan based clinicians and hospitals to regional, rural and remote
clinicians and hospitals'.[121]

1.184   When asked about the institutions he would prioritise if funding were
limited, Dr Terry Percival of NICTA spoke of schools, TAFEs and
government departments.[122]

1.185   A strategy of prioritising key classes of institution would clearly be much
cheaper than the NBN. For example, AARNET gave evidence about the
incremental cost of extending its network to a range of other institutions;
the figures were much lower than the expenditure exceeding $50 billion so
far announced for the NBN.

> **Mr Hancock:** …we have already proposed to the federal
> government and AEDN—an Australian Education Digital
> Network—which is what we call an overlay network. We simply
> build a network over the top of our network and provide a
> backbone for the school system. We also proposed the original

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119   *Committee Hansard,* Canberra, 27 May 2011, p 19.
120   *Committee Hansard,* Canberra, 27 May 2011, p 22.
121   NSW Health, Submission 117, p 2.
122   *Committee Hansard,* Sydney, 29 April 2011, p 61.

VEN, which is the vocational education network—the $80 million network; you might have heard about that—for connecting the major TAFE institutes around the country.[123]

c. Maintaining greater flexibility in the network build

1.186   Smartnet argued that the insistence on the 93 per cent fibre target means we will not be able to take advantage of improvements in wireless technology.

> We also have some concerns about the emphasis that has been placed on fibre to the premises, or at least to 93% of them. This is an arbitrary figure and in all probability technology and the need for 'internet on the go' will result in wireless services playing a significant role in how we access the internet of the future. This is already becoming evident overseas. For the moment, we would caution against a fixed objective to connect 93% of premises with fibre...
>
> In this regard, we think that the priority for connecting fibre to virtually all premises has been somewhat oversold and the potential of wireless has been undersold…Wireless technology is changing rapidly and we are likely to see that over the next five years wireless technology, data compression and networking innovations produce performance approaching the 100Mbs a second presently promised by NBN Co.[124]

8. Some nasty side effects

1.187   Coalition Members note the extensive evidence provided to the Committee about some nasty side effects of the NBN. NBN Co will have monopoly power and its management team will determine key broadband policy settings.

a. NBN Co monopoly means higher prices and less competition and choice

1.188   Mr Maha Krishnapillai of Optus highlighted that company's concerns that NBN will be a monopoly.

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123 *Committee Hansard,* Canberra, 27 May 2011, p 28.
124 Smartnet,Submission 134, p 7.

> We still remain concerned that we have created, effectively, a monopoly, and we want to make sure that wherever possible there are as many checks and balances and as much transparency in the ongoing operation of the NBN as possible. A couple of examples would be: we would like to see greater transparency between NBN Co.'s deal with Telstra; we would like to see greater competitive dynamic exerted on NBN Co. in years to come…[125]

1.189   Mr Mark Needham, a member of the Regional Telecommunications Independent Review Committee, expressed concern that the NBN was likely to stifle competition in rural and remote areas (the 'last seven per cent.')

> **Mr Needham**—The committee certainly had a very strong preference for competitive supply. Competition assists greatly in delivering a worthwhile outcome. In the seven per cent that certainly will be stifled. If the USO provider provides a better quality, lower cost service on their own back than the NBN service, is the provision of the NBN service in those locations a waste of money, in that it has not been engineered to deliver the outcomes that are necessary at an appropriate price using the appropriate technology? That dilemma looks like it will exist relatively soon and I do not know the answer to that. To me stifling of competition in relation to the seven per cent is a problem.[126]

1.190   Mr David Jackson, Manager Economic Development, Brisbane City Council, highlighted concerns that the NBN structure is likely to produce higher costs than the structure the Council was considering for its broadband network.

> **Mr Jackson** - Council is concerned that a key feature of the business model that we were visualising is not provided for in the architecture of the NBN. The architecture of the NBN does not allow the full benefits and functionality of the technology to be realised. The architecture builds in costs that make the use of it more expensive than it needs to be, limiting the scope to bring down costs, maximise utilisation and make Queensland and Australia more competitive.[127]

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125 *Committee Hansard*, Sydney, 29 April 2011, p 23.
126 *Committee Hansard*, Brisbane , 18 March 2011, pp21-22.
127 *Committee Hansard*, Brisbane , 18 March 2011, pp4-5.

1.191   Mr James Kelaher of Smartnet commented that the focus on fibre to 93 per cent (the political objective set for the project) is distorting choices and producing sub-optimal outcomes. This will mean higher prices, less competition and take up being held back.

> **Mr Kelaher** …If you are running a project that is focusing on fibre to 93 per cent of homes and you are trying to generate returns and attract debt to do that, then you need to ensure that the revenue flows generated by that project are attractive to debt financiers. That means that you need to set your pricing parameters at such a rate that will attract debt financiers. You also need to ensure that there are no cherry pickers that will undermine that price, which takes you down a route of stipulating a base price, which we already think is too high and which will in the long term be a barrier to adoption by a large number of the population.[128]

1.192   Mr Kelaher commented that a better approach would be to focus on getting services quickly to areas that are underserved.

> **Mr Kelaher** …We would like to see more focus on how to get runs on the road as quickly as possible for those areas that historically have been underserved by broadband and how to ensure that we are stimulating and responding to the developments that are occurring internationally around mobile devices.[129]

1.193   Internet service provider Internode provided evidence that NBN's pricing is sharply higher than pricing in the marketplace today.

> When we look at point to point uncontended services the wholesale cost of a point to point 100 megabit link is over $9,000 per month. This is a disappointing number because it's the same cost as a gigabit service today from existing wholesale providers.
>
> Under the current Product and Pricing construct the NBN will be ten times as expensive as existing wholesalers are today for corporate and business grade services.[130]

1.194   Internode also makes the point that movie download services like Netflix will be unviable under NBN Co's pricing construct.

> The Netflix service would not be economically viable under the NBN Co Product and Pricing construct because the $20 per megabit cost of the concentrating virtual circuits (CVCs) means

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128   *Committee Hansard*, Brisbane , 18 March 2011, p.59.
129   *Committee Hansard*, Brisbane , 18 March 2011, p.59.
130   Internode, Submission 224, p 3.

that subscribers who use a Video on Demand service will cost their retailer at least $66 per month.[131]

1.195   Dr Marcus Bowles provided evidence that the cost of data in Australia is high by world standards, and the initial pricing offered on the NBN suggests this will continue to be the case in the NBN world.

> Currently Australia's cost of data per MBit/s is higher than the OECD average and all countries with comparably high broadband penetration rates. At USD$11.82 Australia was ranked 15th in a comparative study of average price per advertised Mbit/s (OECD, Broadband Statistics as at October 2009), far higher than the lowest price of USD$1.76 (Korea) and, with the exception of Sweden, way behind all the countries ranked in the top ten BQS nations that had averages below USD$5.56 per Mbit/s (Vicente et al. 2009: 9; BQS 2010). Rather than directly addressing this issue there is currently evidence that suggests the initial cost of data per MBit/s for those offered subscriptions that connect to the NBN are not at all competitive with OECD price averages (Bowles, 2011).[132]

1.196   As Broadband Minister Conroy recently said acknowledged, the latest OECD statistics show that Australians pay relatively high prices for the Internet compared to other countries, particularly for 'low speed' connections where Australian prices are the third most expensive of 24 countries.[133] This raises a critical question: what impact will the NBN have on broadband pricing for end users?

1.197   Coalition Members are concerned that because the NBN uses such an expensive network design (fibre to the home), prices on the network will inevitably need to stay high to allow NBN Co to meet its financial return targets. We also fear that the NBN will reverse a long-term trend of falling prices: according to the OECD, DSL pricing in Australia fell by 69% between 2005 and 2010.[134]

1.198   We are particularly concerned about the likely impact on regional and low income households, which already have relatively low broadband usage. Broadband take up is lower in regional households (at 62%) than metropolitan ones (75%). 94% of high income households (earning more

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131 Internode, Submission 224, p 3.

132 Dr Marcus Bowles, Submission 42, p 5.

133 http://www.minister.dbcde.gov.au/media/media_releases/2011/157, accessed 19/8/11.

134 OECD (2011) - OECD Communications Outlook 2011, OECD Publishing, Table 7.17 page 293, showing Telstra BigPond pricing.

than $120,000 a year) have access to the internet at home compared to only 43% of households earning less than $40,000.[135]

1.199   We heard no evidence explaining how the NBN is going to change this inequitable distribution by making broadband more affordable. Some witnesses expressed their hopes for increased broadband access by disadvantaged groups. However witnesses including from government were unable to explain how the NBN will deliver cheap connectivity and drive down prices.

1.200   Many witnesses expressed concerns that high prices for services on the NBN will impede demand and take up.

1.201   Ms Rosemary Sinclair of ATUG pointed to the importance of retail pricing in influencing take up, and in turn the importance of a competitive market in delivering attractive retail pricing.

> What we have got in the market at the moment of course is relatively affordable wholesale prices. The question is: what will the retailers do? I think it is really a watch-this-space issue. If the market is truly competitive then the retail prices will be competitive and affordable. But if the market is not as competitive as we would like to hope then perhaps we will have a problem with those retail prices.[136]

1.202   Mr Andrew Mills, Chair, NBN Taskforce, South Australian Government, highlighted the risk for disadvantaged consumers.

> **Mr Mills**—There are always risks. The people who are most disadvantaged will get the most out of the NBN. The challenge is that they will probably be the ones who can least afford it. So I think there is a challenge there. Getting that price to suit everyone's ability is really important.[137]

1.203   Mr David Jackson of Brisbane City Council commented that the structure of the NBN was likely to produce unnecessarily high prices.

> **Mr Jackson**—What I am saying is that there is a number of levels in the NBN system whereby additional parties come into it and put their charges on to the cost to the end user that may not need

135   ABS Catalogue No. 8146.0 (2010), Household Use of Information Technology, Australia, 2008-09, page 9.

136   *Committee Hansard*, Sydney, 29 April 2011, p 41.

137   *Committee Hansard*, Adelaide, 4 April 2011, p.61.

> to be there, and inevitably you will have an increased cost. That
> would be my concern.[138]

1.204   The evidence from communities which have the NBN suggests that the
cheap pricing offered under the trial arrangements was a factor in
persuading people to sign up to the NBN.

> **Mrs Farnell**—At home I am on the basic 15-gig plan and the speed
> is so much faster than my current ADSL at work and it is $10 a
> month cheaper.[139]

1.205   Mrs Farnell said that she pays $29.95 a month for NBN at home, compared
to $39.95 for an ADSL service from Telstra at work.[140]

1.206   Since that time internet service providers have begun to announce their
retail prices. It is clear that these will be much higher than the trial prices.
Internode's entry level price will be $59.95 for a 12 megabit per second
service with a 30 gig download.[141] In other words, attractive pricing will
not be a factor causing people to move across to NBN from their existing
services.

1.207   Mr Andrew Connor from Digital Tasmania talked about his expectations
for retail prices on the NBN when he appeared before the Committee.

> To see a 100-megabit service at, say, $50-$60 a month is still a
> bargain, and to take away the fixed line rental that you are paying
> of $20-$30 a month for a service that many people do not use—
> they have it just so they can get an ADSL service—is clearly a
> saving in the long run.[142]

1.208   The recently released retail pricing suggests that Mr Connor will be
disappointed, with the lowest priced 100 Mbps service offered by
Internode priced at $99.95.[143]

b. NBN Co's management setting agenda

1.209   Ms Rosemary Sinclair of ATUG highlighted the risk that NBN
management's priorities will end up distorting the achievement of
telecommunications and broadband policy objectives.

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138 *Committee Hansard*, Brisbane , 18 March 2011, pp8.
139 *Committee Hansard*, Launceston, 10 March 2011, p 11.
140 *Committee Hansard*, Launceston, 10 March 2011, p 14.
141 ADD REFERENCE – INTERNODE WEBSITE.
142 *Committee Hansard*, Launceston, 10 March 2011, p 25.
143 http://www.internode.on.net/news/2011/07/236.php, accessed 15/8/11.

> **Ms Sinclair:** Yes, I think there is a risk because it is human to want
> to make the biggest and best mousetrap and return that you can…I
> think that the ongoing management of NBN Co. to ensure that the
> policy objectives are achieved is going to be a very important
> task.[144]

1.210   Mr James Kelaher, Director Smartnet, highlighted the risks to the backhaul
        market (and in turn the mobile operators and their customers) from the
        likely pursuit by NBN Co management of their own agenda.

> **Mr Kelaher**…Most of the telcos that are talking 4G and LTE are
> probably anticipating using the backhaul network that NBN Co.is
> putting in place. I think that does—
>
> **Mr FLETCHER**—In a sense that leaves them, does it not, exposed
> to the particular approach that the NBN management chooses to
> take on that as opposed to an alternative model that might be
> conceived in which there was a stand-alone entity that only owned
> backhaul and did not own an access network?
>
> **Mr Kelaher**—I think that is right.[145]

9. Conclusion

1.211   This inquiry was set up for political reasons by the Gillard Labor
        Government. The objective was to generate a feel-good report offering
        support for the rollout of the NBN.

1.212   Despite that, some useful information has emerged. We have seen some
        impressive examples of the ways in which broadband can deliver benefits
        in health, education, government, business and other sectors. Coalition
        Members congratulate the many innovative Australian companies and
        organisations using and developing broadband technology.

1.213   Most importantly, the inquiry has highlighted the gaping flaws in the
        NBN policy. It is clear that the NBN has been poorly planned and
        implemented, following its highly political conception in April 2009 (after
        the failure of Labor's previous broadband policy.) It is also clear that
        many of the key claims which have been made about the NBN by the
        Rudd-Gillard government are overblown and cannot be substantiated.

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144 *Committee Hansard*, Sydney, 29 April 2011, pp 41-42.
145 *Committee Hansard*, Brisbane , 18 March 2011, pp.68-69.

1.214   The inquiry demonstrated that the central premise of the NBN policy –
        that there is overwhelming demand for fibre to the home – is wrong.

1.215   The single most striking conclusion from this inquiry is that there were
        very few persuasive examples given of applications which actually require
        the speeds that the NBN will deliver. There was a similar failure to
        demonstrate the need for this speed to 10 million premises – as opposed to
        a rollout targeted to a much smaller number of key institutions such as
        schools, hospitals and libraries.

1.216   The evidence also highlighted some very nasty side effects of the Rudd-
        Gillard Government's NBN policy. In particular, by establishing a
        government owned monopoly, the government is suppressing
        competition and handing enormous power to NBN Co's management
        team. The likely consequence – prices will be higher and take up lower
        than under a competitive market structure.

1.217   This inquiry has only deepened our conviction that Labor's NBN is a
        serious misstep as Australia navigates towards the required outcome of an
        improved broadband infrastructure operating within a competitive
        market.

Mr Paul Neville MP

Deputy Chair

Mr Paul Fletcher MP

Member

Mrs Jane Prentice MP

Member