

○ THE PROMISED LAND

COSTS AND BENEFITS OF THE NBN VISION

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The substance of the Government's NBN vision has settled on its importance as a productivity driver. Top-down productivity analysis of the NBN appear to be quite strongly positive while bottom-up cost benefit analyses (CBA) seem to be invariably negative. Proposals to build the FTTN version of the NBN were subject to evaluation, which found that none offered 'value for money'. The second iteration of NBN, the FTTP version, was not subject to such an evaluation. Instead an independent CBA by Henry Ergas and Alex Robson in August 2009 suggests that the incremental benefits of the FTTP NBN do not justify the incremental costs. Productivity gains from high speed broadband may have declining marginal benefit and possible gains from the next set of industry developments may be quite different and harder to achieve compared with those achieved on fixed networks over the past 20 years. The lack of CBA on the NBN means that there is an unquantified risk. We consider the Government's inherent desire to off-lay this risk from the federal budget undermines telecommunications policy development, legislation and regulation. We argue such a distortion has the potential to undermine industry development for more than a decade as Government tries to protect a poorly evaluated investment decision, a pattern that has long undermined industry development in Australia.

INTRODUCTION – A PROMISED LAND

Who wouldn't want high speed broadband (HSBB) with all the promise that comes with it? That broadband 'can bring the knowledge of the world into every classroom, workplace and living room ... change the way our services are delivered – such as health and transport ... (t)he capacity to change everyday lives in the same way that inventions like the railway, the printing press and electricity did', (Conroy 2007, 3). Who would stand in the way of reaching such a promised land?

Although the feature of the Government's broadband policy, the proposed National Broadband Network (NBN), is presented as a breakthrough all-or-nothing investment in broadband, in fact the policy is really a fast-tracking of HSBB capacity increases that would occur commercially in some areas and an extension of HSBB capacity to areas that would either have taken much longer to achieve such capacity, or may never have achieved it without targeted subsidy. The NBN also brings these capacity timing and coverage decisions directly into the hands of a Government Business Enterprise, NBN Co. As well as the NBN, the Government's broadband policy includes regulatory and structural changes some of which are specific to NBN, notably that it operate as a wholesale only carrier.

The substance of the Government's NBN vision has settled on its importance as a productivity driver. In a speech on productivity on 29 March 2010 the Prime Minister, Kevin Rudd, highlighted that 'Infrastructure is a critical ingredient for our future productivity growth', that a shortfall on infrastructure investment has generated a gap between the infrastructure we've got and the infrastructure we need', and that the NBN specifically 'is helping support the economy during the economic downturn, filling the gap in investment activity caused by the global financial crisis, but in the long run it helps build our future prosperity'.

The productivity argument for NBN puts the case for it on a more realistic footing than the ‘game change’ argument, given HSBB is now widely available and relatively inexpensive. A review of several studies of the economic impacts of high speed broadband by Access Economics (undertaken for Telstra and published in March 2009) led it to assume ‘that economy-wide multifactor productivity levels would be around 1.1% higher’ with high speed broadband than with dial up internet (Access Economics 2009, 20). Although it noted that the empirical evidence was imperfect and ‘it remains difficult to make strong conclusions about the impact on the Australian economy. Nevertheless, the ... literature allows for orders of magnitude estimates’. It drew on the 1.1% MFP assumption to make its own estimate that a national NBN of 12 Mbps to 90% of population would have an ‘NPV of GDP terms of approximately A\$9.5bn’ compared with a slowing current trend of HSBB rollout.

While suitably qualified, the top-down productivity analysis is quite strongly positive. How can this be reconciled with bottom-up analysis from market analysts that seems to be invariably negative? The most thorough Cost Benefit Analysis (CBA) of the proposed NBN was undertaken for the Productivity Commission by Henry Ergas and Alex Robson and shows that ‘costs exceed the relevant benefits’ (Ergas and Robson 2009, 23). Their assessment of willingness to pay for higher speed against the cost of a 100Mbps NBN suggest an NPV range from minus A\$3.2bn to minus 37.5bn depending on productivity and crowding out.

There are significant differences between the two studies that make them hard to reconcile: they do different things and they do them differently. Ergas and Robson assess the CBA for the later version of NBN, the fibre-to-the-premises (FTTP) NBN, using a bottom-up approach, that is, calculating the potential increase in willingness to pay across users and comparing this with the modelled cost of the FTTP NBN. Access Economics use a top down productivity assessment for a fibre to the node (FTTN) NBN with a broad assumption derived from a literature review. This is close to the original version of NBN. Nevertheless, they are so different – one inherently positive, the other inherently negative – that it is worth considering the different views of the productive potential of the NBN. If the underlying rationale is not well founded and NBN turns out to have significant negative economic impact, the consequences may be significant and far-reaching.

In this review, we provide a brief background to the NBN and the Government’s NBN vision mainly for context, examine briefly the rationale given by the government for avoiding a CBA, consider the productivity case for NBN largely based on the Access Economics report, against the CBA case and outline some of the potential consequences that may arise in the likely gap between the productivity case and the CBA.

BACKGROUND TO THE NBN VISION

The background to the NBN may be well known to readers of the *Journal*. We provide the following background as a context for our discussion but also because the NBN process, as it has unfolded, offers a useful clue to the importance of cost benefit assessment to the Government.

Stephen Conroy, then the Australian Labor Party Shadow Minister for Communications, announced the ALP’s broadband policy at the National Press Club on 21 March 2007 (Conroy 2007). The policy was based on the premise that it would support a commercial HSBB rollout by delivering ‘regulatory reforms necessary to deliver a national open access fibre to the node

network (FTTN) ... parties making such investment proposals (would be asked) to specify the regulatory reforms necessary to facilitate such an investment' (Conroy 2007, 27).

The shadow Minister said that a prerequisite for all proposals 'is that the parties accept regulated open access to bottleneck infrastructure. Genuine open access in a FTTN world would require: equivalence of access charges; and full scope for access seekers to differentiate their product offerings by allowing customisations of access speeds, quality of services and contention ratios. Regulated access prices for such a network would be set at a level ensuring that the investment's costs can be recovered and a commercial return can be made' (Conroy 2007, 28).

Such proposals should ensure access to broadband speeds of a minimum of 12 Mbps to 98% of Australian homes and businesses. To support this, an ALP government would 'provide a public equity investment of up to \$4.7 billion' (Conroy 2007, 28–29).

Following its election in November 2007, the new ALP government launched a request for proposals in April 2008 for a network that could deliver a capability of at least 12 Mbps to 98 per cent of the Australian population. Several proposals were received by the due date in November 2008, although a partial proposal from Telstra was soon rejected as it did not include a required plan 'demonstrating how (it would) provide full, fair and reasonable opportunity to Australian and New Zealand SMEs to supply goods and services to the NBN Project' (DBCDE 2008). Evaluation of proposals was completed by January 2009, although the Government announcement took a further two months. When it was made on 7 April 2009, its focus was a grand new plan, a fibre to the premises (FTTP) NBN rather than the previous FTTN version of NBN.

The centrepiece of the Government's new plan was the establishment of a new company to build and operate a 'new super fast National Broadband Network' providing access to speeds of up to 100 Mb/s.

'This new super fast National Broadband Network, built in partnership with private sector, will be the single largest nation building infrastructure project in Australian history' (Joint Media Release 2009).

This new National Broadband Network will:

- Connect 90 percent of all Australian homes, schools and workplaces with broadband services with speeds up to 100 megabits per second;
- Connect all other premises in Australia with next generation wireless and satellite technologies that will deliver broadband speeds of 12 megabits per second;
- Directly support up to 25,000 local jobs every year, on average, over the eight-year life of the project.

'... every house, school and business in Australia will get access to affordable fast broadband' (Joint Media Release 2009).

The new company, which was later named NBN Co, would be jointly owned by the Government and the private sector and would invest up to \$43 billion over eight years to build the NBN. The Government said it would make an initial investment of A\$4.7bn in the network but that

it would also seek private investment and expertise. ‘However, ownership restrictions will be established to protect the Government’s objective of a wholesale open-access network’ (Joint Media Release 2009).

REASONS GIVEN FOR AVOIDING AN NBN COST BENEFIT ANALYSIS

The first NBN, the FTTN version, was proposed to be essentially a commercial undertaking supplemented with a public equity contribution of up to A\$4.7bn. Cost benefit assessments of actual projects would primarily be a matter for the proponents to ensure their own investment case. However, given the Government proposed to contribute up to A\$4.7bn it was careful to conduct its own evaluation to assure it received value for money. As well, if there were to be any concessions on regulation or in some other form, it would be worth assessing if these delivered benefits greater than any costs of such concessions.

The evaluation was not a formal cost benefit analysis. When it announced the process for the FTTN version on 7 December 2007, the Minister for Broadband, Communications and the Digital Economy, Senator Conroy, said that the government was already ‘committed to building a national high-speed broadband fibre-to-the-node network, and that it would run an open and transparent process to determine who would build the network’ (Panel of Experts 2009). Nevertheless, this version of the NBN did weigh up the cost to the government of the proposals (with the exception of the Telstra proposal which was excluded for not meeting the conditions of participation).

However, the second iteration of NBN, the FTTP version, was not subject to even this level of evaluation – that is, an assessment of whether it offered value for money. Surely, this would be a more important evaluation than that for the FTTN version of NBN, given the 10-fold increase in potential government spending; that the Government now proposed to be the lead investor; that there may need to be a Government guarantee to get any private investment; and that a radical restructuring of the industry and associated regulation would be required.

The Minister for Communications said there was no need for a review of costs and benefits of its national broadband network plan as ‘a range of studies have been carried out all over the world that have investigated the economic impact of broadband. ... We don’t need any more studies, any more cost benefit analyses, to know that this is an infrastructure investment that this country is crying out for’ (Communications Day 2009, 4).

It is a remarkable comment. Many people hold similar views that the benefits of high-speed broadband are self-evident and that to delay further will put off the realisation of these benefits and push Australia back relative to our international peers. But it is noticeable that many of the people expressing these views are media companies, content developers and industry service providers that may benefit if or as demand for high speed broadband emerges, but typically they are not those that bear the risk if the demand does not emerge. Taxpayers bear this risk. The supporters of high speed broadband and the politicians leading their cause seem happy for taxpayers to do so without assessment of the risk or the reward. That mismatch between risk and reward alone should be sufficient to trigger public sector alarm bells, warning those responsible for spending taxpayer dollars to undertake a detailed analysis.

It is a questionable comment as well, in that the first iteration of the NBN – proposals for an FTTN rollout – did receive an evaluation from a Panel of Experts appointed by the Government

specifically for this task. On their advice the Government decided to terminate the first NBN process because ‘none of the national proposals offered value for money’ (Panel of Experts 2009).

The Department of Finance and Deregulation has responsibility for cost benefit analysis of government projects from a community-wide point of view. As well a nominally independent body within the department, the Office of Best Practice Regulation (OBPR), promotes the Government’s objective of improving the effectiveness and efficiency of regulation. It has established a CBA Unit to provide training, advice and technical assistance on CBA and risk analysis.

‘The Australian Government has endorsed six principles of good regulatory process as a way of addressing the underlying causes of poor regulation, including the rigorous use of cost-benefit analysis (CBA). In addition, the Council of Australian Governments (COAG) agreed that governments will improve the quality of regulatory impact analysis through the use of CBA’ (www.finance.gov.au/obpr/cost-benefit-analysis).

‘Where regulation is designed to reduce the risk of physical or economic harm, a CBA should include a risk analysis detailing how the regulation will change the likelihood, frequency or consequences of an adverse event occurring. ... The Office of Best Practice Regulation (OBPR) CBA is needed for regulatory proposals with significant impacts as part of the preparation of a Regulation Impact Statement (RIS)’ (www.finance.gov.au/obpr/cost-benefit-analysis).

These are the principles outlined by the Department, but not its practice in the case of the NBN. Finance Minister Lindsay Tanner says that is because, ‘We just formed the view that in effect we had to make the clear decision that said this is the outcome we are going to achieve come hell or high water because it is of fundamental importance to the future of the Australian economy’ (Bartholomeusz 2009).

The Government could say the same thing about health, education, employment, infrastructure, motor vehicle manufacture, housing insulation, training, immigration, defence, water policy and the environment. Indeed, it has said similar things about each of these sectors. But if the basic cost benefit analysis is not done for investments across each of these sectors then how can the Government be sure that each sector receives the appropriate resources, or where capital is constrained, the appropriate share of available capital? And then, of course, how should resources be allocated within each sector without a CBA? The media asked the question:

BARRIE CASSIDY: ‘... on the national broadband network ... the commitment of \$43 billion. Now that’s a huge investment. Have you done an adequate cost benefit analysis given proportionally with the size of the commitment?’

LINDSAY TANNER: ‘Barrie cost benefit analysis of the orthodox kind are basically captives to the assumptions you feed in. So if you fed in my assumptions you’d get one result. If you fed in Henry Ergas’s assumptions you’d get a very different result because we’re dealing here with long term unknowables’.

‘When the mobile phone first appeared was anybody saying at that point, this is going to be a camera, it’s going to be a video camera, it’s going to be an alarm

clock, it's going to send text messages, it's going to do all these other things? Yet within 10 or 15 years that's where it ended up.

'Was anybody saying that it would spread throughout the developing world, the third world, even more quickly than it has in the developed world? No, they weren't.

'So you're dealing with things that are inherently unpredictable. So the kind of traditional cost benefit analysis that is done for a rail line or something would only tell you exactly what the assumptions and the prejudices were of the people drafting the initial terms of reference.'

BARRIE CASSIDY: 'So you can't say for sure that it will return \$43 billion to the economy. That's a lot of money to come back into the economy?'

LINDSAY TANNER: 'Well the amount that is ultimately going to be contributed as equity by the Government is going to be way below the \$43 billion. But we can't specify precisely how much because we are anticipating private investors up to 49 per cent.

'And of course, the company as do other GBEs, government business enterprises, will borrow off its own balance sheet. So it will have part equity, part debt. So if you assume it will be roughly 50/50 government money and private investment, it may get to that level, it may not, but let's assume that, and if you assume a gearing ratio of debt to equity of maybe 50/50, then that means that the initial government equity may be not much more than a quarter of that \$43 billion.

'No we can't be certain of that because we don't know exactly how these things will unfold but we can be pretty clear that it's not the Government stumping up \$43 billion' (Insiders 2009).

In summary, the three reasons given by the Minister for Finance for not doing a CBA on the NBN are: come 'hell or high water' we are going to do it anyway; because 'you're dealing with things that are inherently unpredictable'; and because 'it's not the Government stumping up \$43 billion'.

But these are also reasons CBA should be done: to reduce the likelihood of 'an adverse event occurring' rather than going ahead 'hell or high water'; to reduce the level of unpredictability; and because of the Government's ability to pass risk to other parties (a moral hazard issue that we discuss in the final section of this paper).

A key goal of the CBA Unit is to help build the capacity of departments and agencies to improve the quality of regulatory proposals. With NBN however, we have an example of the selective avoidance of established process to support a preferred capital allocation. The effect of this is to increase the risk of negative outcomes for investment in the NBN and by association investment related to the NBN.

THE PRODUCTIVITY CASE FOR NBN

In a speech on productivity on 29 March 2010, the Prime Minister, Kevin Rudd, highlighted that ‘infrastructure is a critical ingredient for our future productivity growth’, that ‘a shortfall on infrastructure investment has generated a gap between the infrastructure we’ve got and the infrastructure we need’, and that the NBN specifically, ‘is helping support the economy during the economic downturn, filling the gap in investment activity caused by the global financial crisis, but in the long run it helps build our future prosperity’ (Rudd 2010).

A study by Access Economics conducted for Telstra ‘explores and quantifies the economic importance of high-speed broadband (HSBB) to the Australian economy under a range of different scenarios. Using the latest literature, economic data, coverage maps and subscriber numbers, the current and future impact of broadband has been modelled for the period from 2009 to 2020’ (Access Economics 2009, i).

The review was conducted while the Government was evaluating tenders for the FTTN version of NBN, although not Telstra’s proposal, and was published just prior to the Government announcing its decision not to go ahead with that version of NBN, but rather a FTTP version of NBN. The technology considered in the Access Economics report is ‘defined as download speeds of at least 12Mbps FTTN VDSL-based service and the main scenario considered has this rolled out to 90% of population, essentially the same as proposed in the FTTN version of NBN.

The study reviews a number of broadband economic impact studies, tabulating nine with quantified economic results. Most of these are from the US but also include a 2003 study from Australia and a 2007 study from New Zealand. Access Economics says these provide ‘an imprecise sense of the scale of the productivity benefits that may flow from the rollout’. Most of the studies reviewed considered the impacts of broadband rather than HSBB; and the benefits of ‘traditional’ broadband such as email and basic Internet banking, Access Economics notes, should be built into the reference case rather than included as a benefit of HSBB (Access Economics 2009).

Only one of the studies reviewed, the 2003 Australian study conducted by Allen Consulting, analyses the impact of ‘true’ broadband ... considering speeds of 10 Mbps. The incremental benefits of HSBB over ‘traditional’ broadband are those that are unfeasible at lower speeds, including video conferencing and many e-learning capabilities’.

In summarising its literature review the Access Economics paper qualifies the outcome: ‘it remains difficult to make strong conclusions about the impact on the Australian economy. Nevertheless, the aforementioned literature allows for orders of magnitude estimates’ (Access Economics 2009, 15).

In its assessment of such potential uses Access Economics notes that HSBB will not uniformly affect all economic sectors, and where such services have an effect they may produce productivity shocks that ramp up as the network is built and as firms that stand to gain the most from HSBB take it up ‘almost as soon as coverage is available’.

The Access Economics analysis uses a general equilibrium model of the Australian economy to evaluate six scenarios with the core one being the rollout of 12 Mbps ultimately to serve 90% of the population. It considers a number of ways that HSBB will affect economic performance, including improvements in multifactor productivity, new services associated with HSBB, network benefits derived from widespread adoption of HSBB and improved convenience and choice for consumers.

Notably it says the benefits of HSBB are especially difficult to assess because of the newness of the technology, because the impact is diffuse and because of the difficulty in separating additional benefits accruing from HSBB from those that derive from existing networks. For this reason the study considers that it underestimates the net benefits.

Based on its literature review the study assumes ‘that economy-wide multifactor productivity levels would be around 1.1% higher’ with high speed broadband than with dial up Internet (Access Economics 2009, 20). This estimate is then adjusted for productivity impacts over time and across sectors and allows ‘for the fact that some HSBB is available in the reference case’. The adjustments to the 1.1% MFP assumption underlie its own estimate that a national NBN of 12 Mbps to 90% of population would have an ‘NPV of GDP terms of approximately A\$9.5bn’ compared with a slowing current trend of HSBB rollout.

It is a useful review of the literature on the potential benefits of broadband but should be left at that. To draw a line between the results of the studies and the specific quantification of A\$9.5bn in productivity gains from a 12Mbps NBN seems tenuous because:

- Most of the quantified studies are for the USA which has a very different economy and geography to Australia;
- The reviews are imperfect as Access Economics notes but it considers that they probably underestimate the benefit of broadband;
- The reviews lead to an ‘assumption’ that the MFP level ‘would be around 1.1% higher in an Australian economy with HSBB available’ compared to one without any HSBB after 10 years;
- This assumption is used as a benchmark or jumping off point for a comparison of productivity gains from a 12 Mbps NBN compared to one where some HSBB is available.

To extend such a line about productivity further from a 12Mbps case to the 100Mbps case seems perilously tenuous.

ARE THERE DECLINING MARGINAL BENEFITS FROM INCREASES IN HSBB CAPACITY?

The difficulty in jumping off from an imperfect assessment of productivity gains that may arise in the move from no HSBB to 90% coverage of HSBB and applying it to an assessment of benefits when there is already some HSBB is that the benefits aren’t linear. They are likely to decline with incremental improvements given initial coverage; and take up, as Access Economics implies, is likely to be focussed on those sectors and geographic areas that value it most.

There may be also declining marginal benefits from increasing broadband capacity: that is we may derive the bulk of the value from high speed transmission with initial increases in bandwidth say to 12 Mbps or 20Mbps, more than we do from a later move or moves to 50Mbps or 100Mbps. This is often the case with capacity increases, although there may be exceptions where a certain minimum level of capacity is needed to support certain valued services or if additional capacity leads a step up in service development.

It’s an open question in the case of HSBB, but should give pause and consideration before a significant capital commitment. The possibility raises a significant question: if the net value in moving from the current rate of development to more rapid development of 12 Mbps + FTTN VDSL-based service is in the order of A\$9.5bn, the incremental benefit of taking the next step

in capacity is likely to be less than this, particularly if the incremental cost is a multiple of the previous step. At least it's a sufficient possibility that a more fundamental evaluation be conducted.

NBN IS EFFECTIVELY AN UPGRADE FROM ADSL2+ IN MOST AREAS TO FTTP

As we noted, in terms of service capability, the NBN is really a fast-tracking of HSBB capacity increases that would occur commercially in some areas, and an extension of HSBB capacity to non-commercial areas. This incremental nature of the NBN is evident in the major change in the policy from a pre-election proposal to provide 12 Mbps to 98% of population through a policy adjustment in April 2009 to provide up to 100 Mbps to 90% of population and elsewhere connect premises with 'next generation wireless and satellite technologies that will deliver broadband speeds of 12 megabits per second' (Joint Media Release 2009). In fact by the time of the policy adjustment 82% of the population already had access to ADSL2+ with speeds up to 20 Mbps.¹ A cost benefit analysis (CBA) of the first NBN proposal would have exposed this flaw, and even the evaluation that was done may have disclosed it.

Without a cost benefit analysis of the revised NBN the Government has not been able to consider whether revised targets or benefits are the best that may be achieved with its resources, or whether resources potentially costing up to A\$43bn are best directed to these targets. In some areas or market segments higher speeds such as 1Gbps may be a better use of resources; in other circumstances other speeds may provide the best outcome. And other options might achieve comparable outcomes at lower cost.

Selling the policy as an upgrade and an extension of capacity is not nearly as enticing as claiming that HSBB is a 'game-changer' in the way of railways, printing press and electricity. But as the reality of NBN as an upgrade in national broadband capacity has become evident, the Government's case for NBN has shifted from the 'game-change' claims to a more realistic claim about productivity improvement.

CURIOUS COUNTER-FACTUAL WHEN REALITY HAS OVERTAKEN CORE HSBB SCENARIO

Another qualification of the Access Economics study for use in supporting a particular NBN project is its counterfactual – that is, the comparison of the HSBB investment with what would occur in the absence of an NBN. The report prepares a counterfactual acknowledging that even without an NBN 'technologies will continue to advance' (Access Economics 2009, 6). The Access Economics modelling adopts a midway path between two alternatives: the situation where no further investment in HSBB takes place and speeds remain at 2008 levels; and a case where existing trends in speed and investment continue through to 2018. Although it notes that bandwidth has been increasing at an increasing rate, it takes the midway path because it says the industry faces technological constraints that make a continuation of past trends unlikely without an initiative such as the NBN.

Access Economics' MFP assumption of 1.1 per cent increase in GDP is compared with the increase that would occur in a scenario without NBN where some HSBB is already available. However, HSBB is now already available to 82% of the population and has been for some time. That is the reality of HSBB availability in 2010 is not only greater than the Access Economics counterfactual but is running well ahead of the core HSBB scenario it evaluated which had 12

Mbps available 90% of the population by 2016. It may well be that without an NBN the remaining 8% gap may not be closed over the next four years, but it could be closed for a very specific incremental cost. The productivity increment for this particular extension to a further 8% of population coverage may be matched against that specific incremental cost, but will likely be a very minor part of the overall claimed productivity increase.

In any case, in the Access Economics assessment the bulk of productivity gain comes as ‘annual productivity shocks over time, combining both the underlying potential for industries to benefit, and the extent to which NBN unlocks this potential by providing more of the population with (HSBB) at any point in time...’ (Access Economics 2009, 21).

Again, the first of these components is already likely to be overtaken by reality: many businesses already have fibre capacity available and 1Gbps service has become widely available. In most population centres we think this level of capacity is now the ‘norm’ for firms that value HSBB.² (NBN may extend this coverage but only marginally and unlikely in the early years of the project when it is focussed on reaching commercial sustainability).

The second component – providing wider population coverage for HSBB – may be enhanced by NBN. Possibly, there is a HSBB network effect from services like video conferencing that benefit from an increase in capacity being widely available to the general population. However, given the absence of evidence to support this it may be just as reliable to assume that such network effect follows a normal take-up path as consumers become familiar with the benefits offered by such services rather than for such benefits to be discovered as part of a productivity shock as HSBB network is rolled out.

A SOCIAL JUSTICE CASE FOR NBN, OR ASPECTS OF IT, SHOULD BE CONSIDERED SEPARATELY

There are also social justice elements, such as equal access for all, in the case for NBN, especially with regard to regional rollout and national uniform pricing. In principle, these should be assessed as stand-alone policy matters rather than rolled into a case for NBN. That is, the case for NBN should depend on its net benefit. The cases for regional rollout or even uniform pricing have quite distinct benefits and costs which mean they can be made separately to, and may have different answers to, the case for NBN, even if they are contingent on it. Such melding of social issues into what is essentially an economic question has constrained the development of competition in telecommunications in the past, as requirements to provide USOs have been used to obfuscate the case for deregulation.

TOP DOWN REVIEW MAY HELP POLICY CASE BUT IS NOT SUFFICIENT FOR INVESTMENT DECISIONS

Such a top-down productivity assessment is useful to inform public debate and policy review, particularly given the literature review of nine specific broadband productivity studies. Such studies might guide where investment may be directed, but are not sufficient to justify specific investment decisions. That is because specific factors may vary considerably between the general top down case and the specific bottom-up case, as occurs between the Access Economics study and a specific evaluation of the NBN.

Fund managers at investment institutions may use such analyses to allocate funds between different market segments, but would require specific assessment of investment potential before committing funds to particular investments. Financial controllers at large corporations may use such analyses to allocate capital between different areas of a firm's business, but would also require specific assessment of investment potential before committing funds to a particular project.

The Access Economics study describes itself as 'assessing the impact of future investments in HSBB including possible investments under the NBN' (Access Economics 2009, 1) – which sounds relatively specific, but its evaluation is relatively general in our view. It's not intended to support a particular NBN project and its conclusions are qualified by this: '... the estimates derived in this report should be regarded as providing preliminary estimates of the magnitude of key aspects of the total economic impact...?'

Although such a review might focus attention on prospective investments, it does not make the case for particular investments. Ultimately, it would be foolish to base a significant investment decision on a particular top-down assumption: an assertion based on a literature review that MFP levels 'would be around 1.1 per cent higher'. To test the economic justification for a particular project requires a cost benefit assessment.

RECONCILING COST BENEFIT ANALYSIS WITH THE NBN VISION

Henry Ergas and Alex Robson in August 2009 prepared a 'cost benefit assessment (of the FTTP version of NBN), using an engineering cost model developed by Concept Economics to estimate the project's incremental costs (and) a range for consumer Willingness to Pay and its evolution over time. (The) results suggest that the incremental benefits of the NBN, when compared to the counterfactual scenarios, do not justify the incremental costs' (Ergas and Robson 2009, 1).

As the Ergas and Robson CBA deals with a FTTP NBN while the Access Economics assessment deals with a FTTN NBN, the cost structures will be different. However, modelling the cost side of the assessment is straightforward notably being engineering based and with some unit cost inputs from vendors. There seems to be less room for judgement on the cost side. It is possible that the different cost structures account for part of the difference between the two outcomes, but the notable difference in approach is in relation to the assessment of benefits.

Indeed, there are significant differences between the two studies that make them hard to reconcile: they do different things and they do them differently. Ergas and Robson assess the CBA for FTTP NBN using a bottom-up approach, that is calculating the potential increase in willingness to pay across users and comparing this with the model cost of the FTTP NBN. By contrast Access Economics use a top-down productivity assessment for a FTTN NBN with a broad assumption derived from a literature review.

Here is where the key difference arises: 'most of the currently envisaged applications function quite efficiently at speeds well below those contemplated either in the NBN world or in the counterfactual'. The Ergas and Robson study notes advances in compression and coding which reduce bit rate requirements '(a)s a result, even high definition broadcasting and high definition video-on-demand have peak transmission requirements of less than 20 Mbps'. They also note an expected decline in marginal benefit 'It is reasonable to expect the valuation of further reductions in download time to decline as average download times themselves decline (i.e. as speeds increase) (Ergas and Robson 2009, 12).

These assumptions guide the assumptions made in the assessment of willingness to pay. ‘The representative consumer has a willingness to pay (WTP) curve for higher speeds, which ... is increasing but concave as speeds increase. In addition, we assume that this willingness to pay curve is growing over time with increases in income, the development of new applications, and possibly bandwagon effects’.

Ergas and Robson assume \$50 WTP for 10 Mbps increasing to \$71 for 100 Mbps ‘reasonably close to current market outcomes’. Aggregating these benefits across speed adoption paths and discounting the valuation the analysis finds that ‘the incremental benefits of the NBN are far below the incremental costs; indeed, it is difficult to conceive of credible scenarios for the NBN that would make its incremental costs fall below the incremental benefits’ (Ergas and Robson 2009, 17).

Consumers who value HSBB are more likely to have access to it already, because suppliers have an incentive to provide it and users who value it may locate their premises where it is available. NBN may also find it difficult to price discriminate sufficiently effectively to allow the marginal benefits as modelled. For these reason, Ergas and Robson (again in contrast to Access Economics) consider ‘our estimates may overstate the likely gains and understate the likely costs from the NBN’.

While noting the cost difference between an FTTN NBN and an FTTP NBN may be a multiple of three, the difference of substance between the two approaches is in what benefit is derived from productivity increases. Ergas and Robson consider that ‘while it is of course likely that use of higher speed access lines will allow productivity gains, we would expect those gains to be reflected in consumers’ and businesses’ willingness to pay for that use’ (Ergas and Robson 2009, 19).

The top-down assumption of productivity gain doesn’t look so promising when examined from the bottom-up point of view on what consumers and businesses may pay for additional HSBB. However, the productivity case for the fixed line market in general and high speed broadband in particular is not encouraging. Total factor productivity in fixed telecommunications ran at high levels in the 1990s, averaging around 10% pa. These levels slowed towards the end of the decade, but picked up again as DSL technologies extended the life cycle of copper access networks, effectively increasing output from a given infrastructure with modest upgrade capital and ongoing maintenance costs.

Recent trends show fixed line volume and value declining as incremental take-up of ADSL2+ slows and as mobile substitution occurs, particularly with the recent trend in HS wireless broadband and with the commoditisation of voice over Internet.

PRODUCTION POSSIBILITY FRONTIER: WE ARE NOW CLOSER TO IT THAN WE WERE 20 YEARS AGO

One reason why productivity in the telecommunications sector was so great in the 1990s was that prior to initial competition in 1992 sector productivity was so far below the production possibility frontier. At the sector level the PPF is the level at which the sector most efficiently produces output from given allocated inputs.

Prior to initial network competition in 1992, the telecommunications sector produced too little output but used high levels of capital and labour. In the late 1980s and early 1990s Telstra’s

capital spending was typically around 20% of its revenue while the norm for fixed line incumbents is now around 14%. Its labour force peaked at around 87,000 in 1990 – more than twice the current level – and fewer still on a like-for-like fixed network basis.³ Against such high input levels, output levels were a fraction of what they were even by 1997 and bear little comparison to the firm’s output today given there was no mobile operation, no broadband, no pay television and directories and content were minor activities in 1990.

Across the industry, taking into account changes at Telstra, the developments by Optus and, from 1997, other fixed line carriers, Australia’s fixed line performance in the 1990s is characterised by a catch-up from levels well below the PPF to a level close to the PPF by 2000, even though the PPF had shifted further out during that decade.

(For comparison, similar arguments have been made about strong productivity growth in China and other developing nations: when a sector or a nation is well below the PPF, ‘catch up’ productivity is relatively easy, particularly if technologies to achieve world’s best practice are relatively available for adoption.)

Fixed line productivity gains achieved in the 1990s were compounded initially by technology developments, among other things the enormous improvements in the IT sector in the early 1990s such as processing and storage capability. These improvements particularly benefited corporate users of telecommunications allowing whole of service provision, remote networking and so on.

These productivity gains slowed after 2000, in part we consider because by then Australian fixed line telecommunications had closed in on the fixed line PPF. However, fixed line productivity was revived as compression technologies emerged to allow more output from copper access infrastructure. In effect these compression technologies increased the fixed line PPF – that is, they allowed more fixed line output for a given set of inputs. This second pick up in fixed line productivity now seems to be at an end as take up of ADSL2+ peaks and is supplanted by mobile growth and the commoditisation effect on fixed services of high capacity access.

In this PPF explanation of fixed line productivity, Australia has already achieved relatively easy first round and second round productivity gains flowing from market reform (i.e. second round effects being long term gains arising from investment in related sectors encouraged by liberalisation in the first sector.) This characterisation of the pattern of fixed line productivity gains over 20 years suggests that further gains from here onwards are less reliable from an investment viewpoint; there may be further incremental gains, or gains may depend on developments not directly related to fixed network investment.

FALLACY OF EXTRAPOLATION OF PRODUCTIVITY GAINS

We mentioned the gains in fixed line productivity shared by the corporate sector in the 1990s in part achieved through combining digital network developments with IT productivity gains from processing and storage capability. By 1999 these gains were widely expected to continue to ripple through the economy to small and medium size business through the application service provider (ASP) model. As well, the new medium of dial-up Internet allowed analysts to extend this potential ultimately to home offices and home users. Ultimately, the Internet, it was said, would change the way consumers did many daily activities.

Analysts’ models for telecommunications carriers incorporated these trends into forecasts and many investors bought the change, boosting telecoms share prices, investing in start up ISPs,

on-line shopping companies and network rollout plans including submarine cable. And the Internet bubble was born.

CLUES TO COST AND BENEFITS FROM THE NBN PANEL OF EXPERTS

The published extract from the NBN Panel of Experts Evaluation Report (Panel of Experts, 2009) indicates that there was a formal assessment of benefits, but alas no clear indication is provided of what NBN services or developments were considered to be of value by the Panel. There are instead clues in the Panel's observations about value:

- 'each proposal contained attractive elements that, taken together, could form the basis from which a desirable outcome might be achieved'. The Panel did not elaborate in the media release on what are the attractive elements were, or on what basis are they were considered attractive, and on what is a desirable outcome.
- 'The Proposals confirm there are multiple approaches to delivering high-speed broadband and that, with the right technology mix and incentives to create sound business cases being developed, the goal of providing high-speed broadband services to 98 per cent of homes and businesses can be reached'. As ADSL2+ was by January 2009 already available to over 82% of premises the comment suggests that one additional benefit of the FTTN plans was to extend coverage to a further 16% of premises – that is to a total of 98%. But the reference to 'the right technology mix' suggests the Panel of Experts had formed a view that FTTN alone was no longer of sufficient incremental value in some areas and too costly in other areas.
- The Panel also appears to have formed a view that FTTP was a preferred objective, and took the view from the proposals received that an FTTN network is 'unlikely to provide an efficient upgrade path to FTTP'. However, it seems to have made this assessment purely on a cost basis because of 'the high costs of equipment associated with rolling out a FTTN network that would not be required for a FTTP network (i.e. FTTN is not a pre-requisite for the provision of FTTP)'. However, the optimal timing for rollout of FTTP relative to existing technologies, and whether directly to FTTP or via FTTN and VDSL for that matter, is not just a matter of cost and whether some of the resources used for one might be required for a later upgrade, but it is also a matter of assessing relative benefits and the timing of these. Relative benefit may well be a more important aspect of deciding on the ideal upgrade decision or the better upgrade path; an intermediate technology such as FTTN might offer sufficient valuable benefits for a long period before the greater expense of FTTP need be incurred.

Other things that the Panel of Experts saw value in, but did not quantify in its published extract of observations, were 'the importance of competition and not just technology to drive improvements in services; the need to improve competition in backhaul supply, particularly in regional areas; the desirability for a wholesale-only provider of any bottleneck infrastructure; and the desirability of improved regulation of the telecommunications industry to provide investor certainty and speed of outcomes'. In contrast the Panel was not attracted to 'proposals for excessive overbuild protections'.

In summary, it is an odd evaluation from the NBN Panel of Experts. It says that there were no proposals for a national FTTN which offered value for the \$4.7bn proposed to be spent by the Government, but that a more expensive FTTP network might offer value. But it offered few

clues to support this view. To further complicate the upgrade recommendation it said there were multiple approaches to delivering high-speed broadband and that the right technology mix, with competition and without excessive overbuild protection, might be the best way to achieve ‘the goal of providing high-speed broadband services to 98 per cent of homes and businesses’. And it also considered a wholesale-only provider of any bottleneck infrastructure desirable, probably on competition rather than on CBA grounds, but again without an apparent assessment of whether any additional benefits to competition (compared with current or better access arrangements) were significant relative to the cost of a wholesale only provision.

The Panel said it could see a way forward and ‘provided that advice in confidence to the Government because of the commercial sensitivities arising’.

CONSEQUENCES OF THE GAP BETWEEN NBN VISION AND COST BENEFIT OUTCOME

If there is such a large potential gap between the productivity claim behind NBN and its likely cost benefit outcome, where will the shortfall be made up? Four possibilities to make up the financial shortfall are:

- the federal budget,
- NBN access prices (and therefore access seekers’ earnings),
- higher retail prices (to the extent access price increases may be passed on), and
- Telstra shareholders through the transfer of value from Telstra to NBN Co.

Over the past 30 years Australian Governments have become more disciplined in their management of the Australian economy. They have floated the Australian dollar, with one consequence being that they can’t directly use exchange rates to prop up favoured areas of the economy at the expense of other areas. Free trade agreements have opened up overseas market opportunities for exporters but have also led to an erosion of protection to favoured sectors. Governments have ceased to have direct control over interest rates, with one outcome being that inflation is a less likely consequence of excessive Government spending.

As well there has been increasing pressure for Governments to adopt and demonstrate conservatism in fiscal policy, at least until the recent fiscal crisis led to a weaker economic environment. In his 2007 election speech the Prime Minister, Kevin Rudd, argued for fiscal conservatism: ‘This sort of reckless spending must stop’, he said (Rudd 2007). Post the global financial crisis, the form of fiscal conservatism is subject to a debate, for instance over the appropriate portion of GDP that government spending should account for.

As the constraints tighten over trade and currency exchange policies, monetary policy and now fiscal policy, they constrain more tightly the innate desire of Governments to spend money for policy or political reasons. These increase the pressure for proper evaluation of projects, and in light of this the Government has established Infrastructure Australia to ensure that projects are properly evaluated and economically justified before they go ahead. If a project doesn’t pass such an evaluation, but is still desired by Government, the pressure of these tighter fiscal constraints forces pressure to be felt elsewhere, testing other mechanisms available to government: transfers brought about through undermining policy evaluation, regulation or legislation.

We contend in this paper that the gap between the claims of government about the productivity benefits of NBN and its likely economic and commercial prospects is having negative impact beyond just the direct financial shortfall. Shuffling the cards to distribute the shortfall between budget support for NBN Co, access and retail prices and value that may be transferred from Telstra is undermining policy development in the sector, regulation, legislation and ultimately private investment in the sector.

We also argue the distortion to policy, regulation and legislation has the potential to undermine industry development for over a decade and we argue this follows an historical pattern of excessive political over-reach in the telecommunications industry (at least pre-1990), which limited its contribution to the economy and to the overall benefit of the Australian community through the 20th century.

UNDERMINING THE TELECOMMUNICATIONS POLICY PROCESS

From a public policy viewpoint there are two great drivers of value in the telecommunications sector: the productive benefit that derives largely from the enormous economies of scale and scope offered by telecommunications networks, that is putting more traffic through given infrastructure lowers average cost; second, the allocative benefits that largely derive from rivalry in service provision, highlighted over the 20 years of competition by the huge increase in traffic volume (which compounds the productive benefit of scale), extensive increase in service range, technology development and ultimately providing more service choices at more price options than is the case without rivalry.

For twenty years public policy has largely been concerned with considering and reviewing how to best develop these value drivers,⁴ and as they have done then contributing solutions to other policy matters such as universal service and consumer protection. The 1990 Review of Ownership and Structural Arrangements (ROSA) set a broad path for a competitive industry structure including the introduction of competition and supporting regulation.

ROSA and the reviews which followed in 1996/97, 2002 and 2005 reviewed policy and moved industry policy forward to better drive productive and allocative gains. They provided opportunities for industry players and the public generally to contribute to this analysis against a known framework.

The required important policy review and development work has not happened in the case of either the NBN or the structural change that accompanies it, despite the potential negative impact on productive and allocative efficiency in the sector. The initial FTTN NBN was announced in March 2007 and implementation was begun soon after the 2007 election without any further review. During the period in which NBN proposals were prepared and submitted the Government consulted ‘on the regulatory arrangements that should apply as we move to a National Broadband Network’.

It should be no surprise – and indeed few were surprised – when an independent expert panel advised that there were no proposals that offered value for money. A proper evaluation of policy and a decent cost benefit analysis would have exposed the valuation flaw early in the process, avoiding a year of wasted opportunity.

Even then, a proper policy review and development process would have provided the best approach to NBN development. Instead the Government announced on 7 April 2009 the FTTP

NBN policy with significantly greater resource requirement but again without evaluation of proper policy consideration.

Again there was a consultation period within the announced NBN policy. The Department of Broadband, Communications and the Digital Economy (DBCDE) issued discussion papers on each of the two main matters: the industry regulations that should apply, notably over access regulation, and the governance and access arrangements that should apply to NBN Co (DBCDE 2009).

The discussion papers were hurried and poorly considered. They and the consultation process deserve their own evaluation and we consider such an evaluation would expose several flaws, but one in particular serves to highlight the case that NBN policy and the gap between the vision claimed for it and its lack of economic merit has undermined effective policy development.

The DBCDE discussion paper on telecommunications regulation has a section dealing with the vertical integration of Telstra which notes that Telstra's level of vertical integration raises concerns about the extent to which it has the ability and the incentive to favour its own retail business over its wholesale customers. It provides two options for reform including tougher operational separation for Telstra and the introduction of functional separation. Neither option included an evaluation or estimate of the potential benefits or costs, that is, for instance, whether functional separation added more to competition than it added to cost.

To allay the concerns of Telstra shareholders about the consequences of functional separation the paper draws on experience of functional separation from BT and Telecom NZ to suggest that functional separation is 'not costly for shareholders'. It's a ham-fisted attempt at placation given these two carriers are among the worst performing telcos from an investment perspective.

Equity investors quickly responded to this, marked down Telstra shares and moved on. However, when the draft legislation was tabled in Parliament in September, a different alternative was proposed, voluntary structural separation. If Telstra didn't agree to voluntary structural separation it would potentially face draconian consequences, denial of certain valuable spectrum, disposal of its HFC network and its stake in FOXTEL.

To further highlight the poor policy process, shareholders who hold part of the benefit of integration (having paid for it through various Government sales of equity in Telstra), railed against the proposed legislation and draconian penalties and many wrote to the subsequent Senate Environment, Communications and the Arts Legislation (ECA) Committee Inquiry. However, when the Senate ECA Committee considered the matter Senator Lundy noted that shareholders had not taken the opportunity to make submissions to the consultation processes in the first place and this was confirmed by DBCDE First Assistance Secretary Pip Spence (Spence 2009). We are quite sure that if the consultation process had proposed structural separation, it would have received strong shareholder submissions. We are concerned that the consultation process was structured to avoid such submissions.

Similarly, the DBCDE Secretary Peter Harris came to the Senate Inquiry armed with generic investor warnings in Telstra's prospectuses that said: 'There can be no assurance that the current or future governments will not take further steps which alter Telstra's competitive position or the manner in which the Australian telecommunications industry is regulated' (Harris 2009). Regulatory risk was well known and considered by investors prior to each sale but on all three sale occasions the Government had ruled out structural separation, and regulatory policy had endorsed the economic benefit deriving from Telstra's scale and scope.

Shareholders and other stakeholders had a right to expect that if a case did emerge to support structural separation that it would be properly evaluated and that if it was considered to be in the public interest that they would receive 'just compensation' as required by the Constitution. (This case was summarised in a TJA article by David Lindsay (Lindsay 2008).

For 90 years until 1990, telecommunications industry development suffered as Government telecommunications policy sought to protect whatever productive efficiency arose from its monopoly network in the PMG and, from 1975, Telecom against threats from potential rival networks and service providers. In doing so they denied the allocative gains that derive largely from rivalry in supply, that is, competition. Now, it seems, the pendulum has swung to such an extent that competition is regarded as so important that productive efficiency gains from vertical integration may be sacrificed for a doubtful gain in competition.

Possibly the gains from further competition may be worth this cost, but there are good reasons to think they may not – with potentially higher cost structures, higher access prices, service constraints, loss of synergy between network development and other infrastructure, an added layer of bureaucracy with a protective mindset and, most importantly, a forced split in the relationship between customers and network infrastructure supply that is the undermining of the most fundamental of economic relationships between buyer and seller. At the very least it deserves a proper evaluation rather than a strategy to avoid difficult questions, and subsequent denial.

UNDERMINING OF TELECOMMUNICATIONS LEGISLATION

Similarly, the gap between the NBN Vision and its likely poor economic case has led to proposed legislation that is poorly designed in terms of achieving policy outcomes and so leads to a deterioration in the rule of law through the removal of appeal rights, removal or threatened removal of legal privilege and exemptions from well established practices in the Trade Practices Act.

After 20 years of moving away from Ministerial discretion to a codification of responsibilities the new legislation reintroduces substantial Ministerial discretionary powers. The Telecommunications (Competition & Consumer Safeguards) Bill 2009 has at least 15 areas where the Minister would have discretionary power to make determinations setting out performance standards and benchmarks for various telephony services, placement of public telephones, setting of penalties, matters that the ACCC must have regard to in relation to considering voluntary structural separation, over designation of radio frequency spectrum that may not be made available for Telstra, undertakings on certain asset sales, setting requirements for functional separation and varying undertakings on functional separation. Some of these powers, for instance those dealing with the firm's operational structure, potentially claw back ownership rights sold by the previous government. Other draft legislation dealing with NBN would provide further discretionary powers.

While these legislative issues might be considered as issues separate to the case for NBN, our view is that this legislation is intended as bargaining leverage to help the transfer of value from Telstra to NBN either directly as part of a negotiated outcome or indirectly in the long term as Telstra is constrained operationally and legally by it. That is, such extreme legal measures seem to be considered necessary in order to achieve an outcome in which the NBN Co may be economically viable. They are a case of bad policy leading to worse policy.

THE UNDERMINING OF INDEPENDENT TELECOMMUNICATIONS REGULATION

Perhaps the most significant of all developments is how the NBN policy as it has evolved has undermined the independence of telecommunications regulation. Prior to the NBN policy being established Telstra had a poor relationship with the regulator, but largely in our view because the regulation was relatively effective in encouraging competition. (Regulation and policy may have done better, as we noted, if it had addressed some of the other constraints to competition.)

Mostly, if anything, investors tended to accept the ACCC view on matters such as access policy. Standing apart from Telstra, some Telstra shareholders may have considered that access policy was lop-sided but at least the access pricing approach was well established and well known prior to the Government's sale of its majority stake in 2006. Contrary to the advice on competition regulation tabled in Parliament with the draft legislation, access pricing for ULL had been very effective in encouraging competition. From when it became effective in mid 2006 (before the sale of Telstra 3) LSS and ULL-based DSL competition had transferred around 15% of lines from Telstra to competitors over three years, and closer to 25% in the target metropolitan areas. Structural separation, or the lack of it, wasn't a cause of failure in this instance.

In December 2008 the ACCC published draft access prices that would have taken ULL prices even lower to \$14 in metropolitan areas. However, before it could finalise these, the Government announced its change in NBN policy and the establishment of NBN Co. The revised policy was quickly endorsed by ACCC Chairman, Graeme Samuel. In a speech in May 2009 he said 'The NBN will spark a new wave of infrastructure investment, technological change and product innovation in the sector. It will usher in 21st century communications technology ...' (Samuel 2009).

He listed five 'serious advantages in a range of critical areas' that could be offered by the NBN. Again there was no consideration of the costs and benefits of these but there was a preparedness to change access pricing to accommodate it. The ACCC also argued at this point that the new NBN policy provided an opportunity to restructure the industry, again a claim made without evaluation.

To support the NBN case, regardless of the economics, the ACCC weakened its previous strong stance in favour of de-averaged access prices previously seen as critical to competition. The technologies proposed for the NBN it said 'may reduce the current strong arguments in favour of de-averaged prices' (Samuel 2009).

And so it turned out, at least for a period. In August 2009 the ACCC changed the trend of its draft ULL prices – instead of reducing them, increasing them in metropolitan areas over three years to \$23.50. However, after a strong negative response from industry and after a proposal from Telstra, the ACCC froze the existing set of prices for a further year while it reviewed the basis of access prices in the transition to NBN.

Will industry get an appropriate outcome from the ACCC on access prices both for NBN and in the transition period? It's doubtful in our view. The ACCC's support for the NBN policy, unevaluated as it is, has tested its regulatory independence. How will it respond on the access price trend it must regulate? Will it keep the faith with competitors and keep access prices low? This will not encourage them to migrate to the NBN which the ACCC says 'will be the biggest infrastructure rollout in Australia since the Snowy Mountains scheme ... and unprecedented internationally'. But if it does not, the commercial case for NBN Co becomes even harder.

A second key area that will test the line between the ACCC's regulatory independence and its support for the NBN policy is the requirement that it consider whether any agreement between NBN Co and Telstra, even a forced one, breaches s45 of the Trade Practices Act which prohibits agreements 'if they have the purpose or effect of substantially lessening competition'. There is potential for parts of the agreement to have such an effect, but what if these are necessary to help NBN Co's commercial prospects?

Another area of potential conflict between competition and NBN Co's commercial prospects is that NBN Co has proposed 200 points of interconnection (POIs). Having more POIs, as Telstra has proposed, increases competition, notably where Telstra has infrastructure running between its current exchanges and POIs. There may be potential for other carriers to develop their own infrastructure beyond the proposed POIs, and this potential may change over time as volumes evolve and as population centres develop. How will the POI structure develop to accommodate a shift in the boundary of potential infrastructure competition? An NBN Co focussed on improving its commercial prospects might resist such development even if it is good for competition. How will the ACCC weigh this given its support for NBN Co?

Craig Emerson, Minister for Small Business, said recently in relation to the use of regulation to fund government projects, 'the attraction of regulation is that, unlike budget spending, its cost is usually hidden'. To be clear, he was criticising the practice suggesting that where Governments are budget constrained 'they turn to regulation to indulge their social and environmental engineering obsessions' (Emerson 2010). All the more reason, in our view, to have a strong independent regulator that can stand up to the potential abuse of regulation to help make up the shortfall on poorly evaluated projects.

SO IS THE NBN THE BEST WAY TO ACHIEVE THE BENEFITS OF HSBB? NOT EVEN CLOSE!

Although telecommunications competition is well established in several market segments there are claims that infrastructure investment levels, particularly relating to HSBB, are less than optimal compared with global peers. It is not clear that this is true, much less what the reason may be. It may be that Telstra's structure and its desire to maintain returns on existing investment are key causes, but there may well be others including rival investment levels, industry fragmentation, poor regulation and foreign government ownership of second carrier Optus. These receive little if any consideration. Only the popular case against Telstra gets a hearing in the policy domain.

Telecommunications competition has developed sufficiently to contribute to an industry that serves the Australian community relatively well in service range and depth, service provision and quality as well as service development and prices. The performance of competition, supported largely by regulation, is part of the reason for this. But another part – a substantial part – is the productive scale and scope of Telstra's operations. Indeed, part of the initial case made in the 1980s for competition was that it would better hone Telstra's productive potential. Indeed it was considered then that this impact on Telstra might be the main benefit of competition rather than whatever additional benefits new competitors might bring to the market.

As the next major policy step in the development of the industry the design of the NBN and its implementation fails both allocative and productive efficiency tests. It risks increasing industry

cost and prices. The NBN as proposed does not provide the right model to assess and deliver the benefits of high speed broadband services. As a wholesale-only operation it will not have direct contact with end users and will not be in a position to evaluate and respond to their changing needs. Service providers and retail carriers will either have to do this and then run the gamut of capital allocation by NBN to ensure that access network development and deployment meets their needs. And such allocation has demonstrably been driven by political rather than market needs. Alternatively, they may invest in their own access network capacity. Over time there will be a tendency by better-placed carriers to differentiate their service by direct investment in access in commercially attractive areas that are likely to expand over time. Will the policy, legislative and regulatory processes established to support NBN Co encourage them or inhibit them in this?

And NBN Co as established is not the best organisation to deliver a productively efficient high-speed broadband access service. Its separation of infrastructure operation from retail services leaves it less able to achieve economies of scale and scope through, for instance, retail packaging. Its government ownership makes it vulnerable to political capture resulting in resources allocated for political rather than market purposes. Several major resource decisions so far (initial FTTH rollout in Tasmania, the five backhaul projects and the hiring of senior staff) point to resources being allocated for reasons not primarily related to commercial evaluation.

Given the lack of even a broad cost benefit assessment to justify it sets NBN Co up as a white elephant in waiting and risks further poor policy, legislation and regulatory intervention to address the shortfall. Before 1990 this was a well established pattern in telecommunications policy development in Australia from the first Government intervention over private sector telecommunications industry investment by Government in 1854 (in fact the ‘the first transfer of modern telecommunications technology to Australia’, Moyal 1984, 16), through the crippling investment required for the overland cable that nearly bankrupted the colony of South Australia, the ‘nationalisation’ of the early telephony industry pre-Federation which led to ten years of inaction post federation and a century of protected underperformance, the nationalisation of AWA and Cable and Wireless in 1946 which undermined the Commonwealth position as a leader in development of submarine cable, to the more recent examples of Aussat and the fabled Multi-Function Polis. Each of these interventions, poorly evaluated before they were taken, has had ongoing negative consequences which have inhibited and distorted the development of the industry.

The NBN risks repeating this pattern and taking the industry back 30 years to a time when meeting demand was influenced by government preference and ministerial favour rather than by market demand, prices were poorly related to cost and demand, costs were inflated by the effect of Government protection of its core investment and telecommunications policy development, legislation and regulation were constrained by the priority to protect poorly evaluated investment decisions.

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ENDNOTES

- ¹ Telstra qualifies its ADSL2+ offer saying '(a)bout 50 per cent of members on the 20Mbps plan can access speeds around 10Mbps or more' (http://www.telstra.com.au/bigpond_internet/adsl2.html). Although the Government's current NBN policy specifically refers to 'broadband speeds of 12 megabits per second' the shared nature of wireless and satellite transmission suggests this may be intended to be speeds of up to 12 Mbps. Its original (pre-election) NBN policy called for proposals to deliver 'access to broadband speeds of a minimum of 12 Mbps to 98% of Australian homes and businesses' (Conroy 2007). The RFP for the original NBN also set as an objective 'a minimum 12 Mbps dedicated downlink transmission speed over each connection provided to a premises'.
- ² For instance nearly half of Amcom's revenue is from 1Gbps service.
- ³ Telstra has 30,924 full time employees but including contractors and outsourced staff, many of whom work on the fixed network, has a total workforce of 43,332.
- ⁴ Closer to thirty years, since 1982, if we include the Davidson Inquiry.

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