From: Michael Porter – Deakin University
Date: Thurs 20/03/2014
To: Dr Michael Vertigan AC
         Cost-Benefit Analysis and Review of Regulation
         Canberra

Dear Dr Vertigan;

I have just realised this may be a week late; I have been travelling. Since there was wide agreement over the last few years at a wide range of meetings, accepting the thrust of my Report for the Committee for the Economic Development of Australia (CEDA), when I was National Director of Research and Policy at CEDA, it was suggested I should forward it along with some other *Australian Financial Review* pieces on the subject. The conference that launched the attached report was attended and supported in many ways by No 2s from Telstra, Optus, the ACCC and more.

The debate was only muted because of the entrenched position the Prime Minister and Minister of Telecommunications of the time, against almost all expert and economically researched advice. While many confused the speed of light with a case for mandating fibre for all, like mandating Ferraris, it needs to be stressed that almost every person with expertise and that was approached in Australia and overseas at that time by CEDA, sought infrastructure competition not the destruction or overbuild of existing assets as in the Conroy plan, which violated a careful reading of ACCC legislation.

I know from meetings at the initiative of the former CEO of major companies involved in constructing the NBN, that there was widespread agreement with a model in which the NBN would in effect become a wholesale "Aggregator" of existing actual and potential broadband assets – be they copper, HFC cable, fibre optics or wireless. Technology would continue to augment the capacity of all of these technologies, which could build on many existing assets and systems as has proved the case with DOCSIS 3.x, wireless, Vector DSL and more.

My so-called "Four Doors" to wholesale competition, if managed by an independently regulated NBN, could both increase availablke speeds and lower costs. In effect Telstra, NextGen, Optus, iiNet and in fact *all* potential asset holders could *tender in assets for use by the aggregator providing capacity for a layer of retail competition on top of the underlying infrastructure competition*. This "tender-in of assets" was one way of dealing with the veto by Senator Conroy of all non-NBN infrastructure, since they would or could use the assets that could best be used or adapted, avoiding the absurdity of overbuilding and destroying existing capital.   Pumping up the return on the state owned NBN Co, by restricting and decommissioning copper and HFC assets would be seen as both illegal under competition law (as Samuel conceded at CEDA) and a violation of correct accounting of profits, since destruction of capital is a loss to be added to any returns of NBN. That laws needed to be passed to make it legal to act illegally under the existing competition laws was something the ACCC brushed under the table under pressure.

Rather than duplicating and then destroying assets and contriving rates of return on the replacement assets, the NBN would serve a useful purpose of facilitating both wholesale and vertical competition.

I mention the above points because I was struck at the time, back in late 2008, and since that time through many corporate approaches from parties in the system, by the fact that few if any seemed to disagree with the non-destructive approach to capital arising from competitive infrastructure competition across all existing and new assets; no doubt because such competition was already happening in less politically contrived markets where there was no desire to create a new state monopoly.

I should also note that at a CEDA meeting in 2009 addressed by the then head of the ACCC Graeme Samuel, the Chairman was acutely aware and embarrassed at ACCC "silence" despite the Minister's NBN policy violating the very spirit of the ACCC's Act. The political restriction both of infrastructure competition and anti-cherry picking regulation, was something he said he just "had to accept". Apparently this capitulation was despite an economic understanding that market based *wholesale competition and competitive pricing would create enough additional wealth and cost savings to enable (needed) subsidy to broadband connections to some regions of Australia suffering black spots or unacceptable service.*

Good policy was at the time known by the ACCC experts to be removing a digital divide assisted by the wealth creation and cost saving effects of the infrastructure competition model. Clearly the ACCC of the time knew the *One-Fibre-Network-Suits-All* model was deeply flawed and was wasteful of many billions of Australians' capital, but the political climate was wrong and courage in short supply.

From remarks and documents to date, I do look forward to the Review and the Minister retrieving a rational, speedy and world class solution to the unfortunate position the broadband market faced until recently. Regrettably CEDA appointed a political ally and ex Labor Speaker of the former Labor Minister's, and CEDA failed to continue to contribute to this debate. But the position and research does, I believe, stand the test of time and experience elsewhere.

Your sincerely

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http://www.deakin.edu.au/alfred-deakin-research-institute/policy-forum.php

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The 'Four Digital Doors' –

a CEDA Research perspective on digital competition

1.1   Introduction

Given the new technological and financial situation facing Australia at the end of 2008, Australia's information policy must be modified to achieve real competition across the 'Four Digital Doors' of telecommunications infrastructure. CEDA has a firm view that broadband competition should come from and within:

1. Copper telephone lines (ADSL and VDSL)
2. Wireless systems (mobiles, WiMax, satellite)
3. Hybrid fibre-coaxial (HFC) cable
4. Fibre systems, including the fibre-to-the-node (FTTN) network, subject to tender.

Each of these digital doors will in the future produce fast broadband and the services that go with it, such as voice, video, TV, including internet-based TV (IPTV), data and text on a range of platforms. Media and general business competition is highly dependent on the speed and volume of data obtained through these potentially competitive but differing infrastructure doors.

The current policy debate should be about much more than the FTTN rollout, since existing cable and evolving mobile platforms also present fast and competitive platforms, as the Australian Competition and Consumer Commission (ACCC) and most independent parties have confirmed. Yet we seem bogged in a technologically exclusive debate about a 98 per cent rollout of FTTN, rather than on how to deliver the best information services to customers in differing situations. While there are issues where joint use of these technologies requires coordination, and where other technologies can blend in (for example, using electricity wires and railway lines), these synergies do not require the dominant role of one party as at present. Australia needs competition across infrastructures, keeping Telstra as a key but competitive leading edge in telecommunications.

This chapter argues in favour of a broad approach to 'infrastructure' competition in telecommunications. It argues against the application of a restrictive access regime to apply to the winning FTTN network that emerges from the current Federal government

CEDA has resolved that on a small number of key policy issues affecting the economic development of Australia, CEDA Research will assemble articles and a policy perspective. There may also be preferred policy directions in the attached documents. While CEDA continues to be a neutral and broad facilitator of dialogue and opinion on a wide range of topics related to economic development, on this limited set of key issues CEDA Research may go beyond the facilitation role to suggest directions and options worthy of government actions. Broadband and digital information policy is such an area.

This CEDA volume reflects alternative views regarding the current situation facing Australian broadband, telecommunications and, as a result, associated media policies. The papers also draw on lessons from international experience with the structuring and regulation of broadband and competition issues in telecommunications. CEDA Research has noted that in the case of telecommunications, regulation, or implementation of regulatory advice, has had a habit of being out of sync with technology in the sense that regulation today is based on perceptions of competition that typically understated the competitive forces emerging in the marketplace.

tender process. It argues against structural separation of Telstra on the grounds that there are distinct coordination and other vertical synergies from owning a network and retail telecommunications business. However, in order to achieve horizontal competition in telecommunications and particularly broadband, it argues in favour of the successful bidder for the fibre tender being required to divest all shares in its coaxial cable systems. Cable can and should be a much more competitive source of broadband as well as cable TV (Telstra HFC cable passes 2.5 million homes; Optus 2 million).

The arguments related to forced access to private infrastructure to benefit separate firms and their customers has recently been the subject to lively debate and rulings in the Pilbara, regarding third party access to freight railways built by iron ore producers. Just as in the Pilbara, there seems an excessive focus in telecommunications policy on access to the facilities of producers who are already in competitive product markets and whose investment decisions will be frustrated by the scheduling complications of sharing. The common view is that it makes sense for owners of railways (or wires or networks) to share costs with external companies who would like to pay to use a line. Why not force a deal and save wasteful capital expenditure on duplicate infrastructure and allow further downstream competition through access rights? These are difficult issues in the case of the Pilbara, where adjacent railway lines may not make sense despite the powerful economic arguments. But in the case of fibre, copper, coaxial, cable and wireless mobiles, Australia has these multiple infrastructure

systems in place, with one about to expand by tender (FTTN). In these circumstances it is much easier to argue a nevertheless powerful case against enforced access in the case of telecommunications, precisely because there are going to be at least four doors of infrastructure competition.

Decisions of the previous government in 2004, against ACCC advice, made cable the 'lost opportunity' in broadband competition, a situation that can fortunately be reversed as part of the FTTN decision. Broadband can be a source of competition for television; for example, through IPTV (multi-channels via the internet) – a reality that presents for 2009. By allowing Telstra to retain the vertically integrated copper-based telecommun¬ications, and potentially to win the fibre FTTN rollout, the government will facilitate a state-of-the-art vertically integrated telecommunications company, both in copper ADSL and fibre optic systems. To add a fibre-based system to the current owner of a controlling share in Foxtel cable would, however, facilitate an un-necessary domination of communications media in Australia. Should the Terria consortium win the FTTN tender, it will need to coordinate closely with Telstra, given the interdependencies between the copper and fibre systems, particularly in transition. Thus the parties with controlling interest in the fibre and copper 'last mile' systems should, as part of the contractual conditions, cease to own shares in the HFC cables, and the Foxtel and other cable systems. Instead, access to cable should present real broadband competition, potentially around Data Over Cable Service Interface Specification (DOCSIS) 3.0, and allow much faster speeds than ADSL2+ and many other systems.

Similarly, in the future wireless (mobiles), ADSL/VDSL and fibre will offer digital TV and data in competition with cable TV. The need is to create maximum competition between these broadband infrastructure systems, rather than to haggle over access regimes and the structural separation of Telstra services on the copper system. While there is a vital role for ACCC in regulating access to copper and fibre networks, and particularly for backhaul of mobile and other systems, the dilemmas are much more easily dealt with under infrastructure competition across all 'four digital doors' and notably with cable rejoining the competitive fold.

Prices for broadband access, mobile phone plans, cable TV charges and internet usage charges will all come down, and download volume restrictions relaxed, when the doors that deliver the digital services are all in real competition. After all, what is being delivered through all the doors is simply packets of 0s and 1s which then get unpacked and converted into useful interactive information through an expanding variety of platforms.

Divesture of HFC cable and Foxtel shares by the new winners of the FTTN tender, in modified bids, would remove a perceived conflict of interest that has prevented cable from providing the sort of competition for copper and fibre in more competitive systems overseas – in countries where there is not common ownership of HFC cable and copper ADSL systems; Canada, US and in Europe, for example.

In the context of the personal losses in the current financial crisis, a subsidised FTTN rollout is considered wasteful and unnecessary. Fast broadband is already available in other ways, at lower cost and with many more tailored regional services now emerging, notably for quite remote towns. The tender should be amended to involve no automatic subsidy of the network; rather, the government could 'backfill' where customers may miss out. Additionally, telemedicine, education and other services may properly be the focus of direct subsidies, along with those in remote locations.

1.2 Towards infrastructure competition in telecommunications

Whereas for water, electricity, gas and transport there have been significant technological advances over recent decades, these have been relatively small and more predictable in comparison with telecommunications, and have not changed the natural monopoly status of the key network services which may still need strong but pro-competitive regulation. In the case of telecommunications technology the changes continue to be more dramatic, and they have spawned a range of new products and challenged existing ways of doing business and using information. The consequences of restricting or regulating telecommunications services have rarely been fully understood in advance, as new products and flow-on technologies have jumped forward faster than any of us could expect.

Most of the technologies that combine to create modern telecommunications have experienced revolutionary changes over the last few decades: the microprocessor, fibre optics, the internet, wireless systems and graphic displays are a few examples. Thus it is not surprising that governments seeking to act on behalf of customers appear, in retrospect, to have misjudged the potential for both competition and transitory monopoly powers of a technology that is dominant, if only for a short time. However, we are at a point now where there are enough differing technologies and platforms using these technologies, for a less intrusive form of regulation within telecommunications infrastructure systems. This is because each system in the different classes of systems – copper (ADSL, VDSL), fibre (FTTN, FTTP), HFC cable and wireless/mobile systems (3G, 4G) can now compete among and within themselves – in what is called 'infrastructure competition'. There are also complementary dimensions to competition, and economies of scope with other technologies – electricity and rail communications for example.

Infrastructure systems that may compete can be vertically integrated in many or all dimensions; what is important is that the systems can compete at the wholesale, retail or platform level. While there remain interesting transitional challenges, there is less need for regulation of any one door if all four doors are competing. The trick is to facilitate real competition across platforms – something that is not sufficiently in place in Australia but is proceeding better elsewhere.

CEDA Research's concern is also that in 2008–09, during the most extreme financial crisis of most people's lifetime, it may be unsound to subsidise a rollout of technology that is already capable of evolving via private sector investment. There is a real prospect of current and future players delivering best practice for the vast bulk of customers, based on fibre-optic systems. The new systems will evolve from the copper network, but supplemented for more remote communities by very broad access via 3G and 4G mobile systems, wireless systems such as Wimax and the new wave of satellite phones for those off the 'last mile' or out of copper and urban fibre range. This access and speed situation is in evolution and is in sharp contrast to the dial-up mode many used at the time the FTTN policies were first rolled out by both political parties.

The situation now is one where both the copper ADSL systems and the mobile phone 3G (NextG) platforms are delivering speeds and access that are far better than predicted. While Australia is lagging in rollout of fibre-optic technologies relative to many countries, the spending of $4.7 billion subsidy does not seem in order given the potential of the mobile and satellite systems and the chance to blend and extend existing fibre cables with wired and wireless systems in the bush.

Ergas and Ralph (see chapter 4) argue Australia is lagging because of regulatory uncertainty making for a climate that discourages investment, and they also note the competitive potential from other telecommunications infrastructures. Joshua Gans argued in a 2006 CEDA information paper (Gans 2006), and again in this volume (see chapter 3), for a far more

localised approach to delivery of broadband – not a one-size-fits-all model. CEDA shares these views.

In summary, a new policy and regulatory mix is capable of delivering an outstanding range of services, with modest residual needs for subsidies to those in remote Australia. The key to the change is genuine competition between the cable, copper, fibre and wireless systems.

1.3   US example of infrastructure competition

As Jeffrey Eisenach argues (see chapter 5), there is a general recognition that the evolution of regulation and competition policy in the US has been less than ideal. Yet today the imperfectly conceived (initially from horizontally unbundling AT&T, for example), vertically integrated structures in the US are delivering real competition across the system, as cable, ADSL, mobiles and fibre deliver competitive outcomes. In Australia the debate has been very much about sharing access on the copper 'last mile' and the potential for sharing in a much faster fibre-optic system through the rollout of a FTTN system.

As Eisenach notes:

> The debate over broadband policy is at once dizzyingly complex and utterly simple. At its simplest, it boils down to this question: will consumers best be served by forcing incumbent owners of communications networks to resell access to their networks to competitors ('unbundle') at mandated prices; or, alternatively, should competitors be required to build their own networks, thereby encouraging investment in competing infrastructures? At least part of the answer lies in incentives: If forced to resell their networks to competitors, incumbents will be less inclined to invest; and competitors, given risk-free access to the networks of incumbents, will have weaker incentives to build new networks.

Henry Ergas and Eric Ralph (see chapter 4) highlight that the regulation regime in Australia makes it very unattractive to invest in new infrastructure, since the access regime imposed is uncertain and has a tendency to force access charges below a level required for investing in new networks. The incumbent argues expropriation, and other users of the network, who are paying fees to the network owner, find it cheaper to use the existing assets rather than invest in new infrastructure. This appears strongly to be the case; one example being a resulting gross underutilisation of the two HFC cable systems owned by both Telstra

(passing about 2.5 million homes) and Optus (passing 2 million homes).

Jim Holmes (see chapter 6) also addresses regulatory issues, focusing on scope within a technology for using regulation to achieve efficient outcomes within a competitive environment across separate infrastructures so as to get better outcomes. Holmes states that, in particular:

> There are two broad choices for regulatory frameworks to promote competition in this situation. Regulators can rely on inter-modal competition – that is, competition between different technologies, to generate appropriate incentives for cost and price reduction, innovation and quality. Or they can rely on intra-modal competition sustained by an access regulatory regime.

In terms of intra-modal competition the choices come down to separation of three kinds: accounting, functional and structural. Holmes goes on to argue there is "no completed example of regulated structural separation, and therefore no established arrangement that can shed light on how the benefits and problems claimed might work out in practice".

1.4   The proposed Fibre-to-the-Node network

The context of this CEDA report is the current tender for the proposed rollout of the FTTN network. To quote from the tender document:

> As a key element of its plan for the future, the Australian Government has committed to provide up to $4.7 billion and to consider necessary regulatory changes to facilitate the roll-out of a new open access, high-speed, fibre-based broadband network, providing downlink speeds of at least 12 megabits per second to 98 per cent of Australian homes and businesses.
>
> On 11 April 2008, the Minister for Broadband, Communications and the Digital Economy, Senator Stephen Conroy, announced the release of a Request for Proposals to roll out and operate a new, open access, high-speed, fibre-based broadband network. The network will represent the single largest investment in broadband infrastructure in Australia's history.
>
> The party to build the National Broadband Network will be selected through a competitive assessment process to maximise outcomes for the community. This process will be transparent and accountable. (DBCDE 2008)

The tender requires both open access and uniform pricing, which Ergas and Ralph argue in chapter 4 are

likely to grossly distort economic efficiency and which discourage "facility-based competition". The imposition of heavy regulatory and uniformity constraints is the opposite of what is required since, as Gans is keen to point out in his contribution (chapter 3), conditions vary markedly across Australia as does the preferred means of serving customers. Ergas and Ralph argue for regulatory delay on the grounds that "regulation once established, cannot be easily unwound, since a range of parties come to rely on it and on the rents it invariably creates".

As noted at the outset, the current and proposed delivery of broadband in Australia is via the following four channels or 'four doors'.
1. Copper telephone lines (ADSL and VDSL)
2. Wireless systems (mobiles, WiMax, satellite)
3. Hybrid fibre-coaxial (HFC) cable
4. Fibre systems, including the fibre-to-the-node (FTTN) network, subject to tender.

The CEDA Research position, following discussions with a range of experts in Australia and overseas, is that the minimum that should be achieved in terms of digital and information sector outcomes is real competition between all 'four doors', something that is not achieved at present. For example, at present HFC cable is not really competing with ADSL in the broadband space since Telstra also offers ADSL. Optus, while owning an HFC cable network passing 2 million homes, uses the Telstra copper network at the regulated access charges. And while Optus still has some 200,000 pay television subscribers, they are in effect subscribers to Foxtel so that Foxtel has no competition on cable but competition through free-to-air broadcasting and potentially IPTV over broadband.

What the experience in Australia and overseas suggests is that cable television systems based around HFC cable can, using systems such as the Data Over Cable Service Interface Specification (DOCSIS), achieve higher broadband speeds than currently available on ADSL2+, yet these systems have been barely marketed in Australia in light of the lack of inter-modal competition. What is suggested by many technical experts is that Australia would benefit from genuine broadband competition between the coaxial HFC cable systems (which would upgrade) and the copper systems, ADSL2+ shortly with the new VDSL range.

The tender of the fibre system is an opportunity to make a condition of winning the tender for the FTTN rollout that the winning party divest all shares in HFC cable and business systems, so that a coherent business in cable will be able to compete with both the fibre and ADSL/VDSL systems as well as wireless and mobile systems.

Furthermore, the competitive structure of mobiles is changing rapidly following deployment of 3G and NextG. WiMax is also an unfolding technology with potential in new areas.[1] Within each 'door' there is also scope for competition; for example, across mobile phones, via wholesale access on copper wires, fibre and cables, and via satellites. In wireless and mobiles, the competition is already intense; based around separate and shared infrastructure, with newer technologies raising speeds and allowing areas of high speed broadband at local levels and at affordable costs.[2] There is also scope for interlinking different systems such as cable to towns, wireless to homes, or using electricity wires to homes from fibre nodes.

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1.5   Media platforms

Flowing from all the potential competition in transmission of digital signals – the packages of 0s and 1s – is a new level of competition in the processor-based platforms that use signals, voice, radio, television and print media via platforms such as telephones, PDAs, computers and all the overlapping devices based around differing combinations of digital technologies. The gap between Australia and better practice was evident at the time of the Beijing Olympics, when broadband customers in countries such as Canada could watch up to seven events at a time on the internet, while customers were rationed access to a single event in Australia. While we do not argue against subsidy of disadvantaged or remote customers, or of production of creative content from Australia, quite the contrary, the priority now is facilitating the power of competition across all platforms before such fibre rollout subsidy decisions are implemented. The gaps need to be clear before the backfilling starts!

For the proposed FTTN network, the terms and conditions of the tender need to be tuned to achieve the best outcomes for consumers of digital information and the products that flow from it, with care to preserve or even enhance competitive technologies that will deliver competition despite the advent of a new dominant model. Any subsidy element should be for community groups and technologies with substantial external benefits – remote communities, education and telemedicine – where there is a convincing case for subsidy from the government's announced fund.

While solutions that maximise community benefits from public and private investments are needed, as facilitated by a sound regulatory environment, there

are fine judgements involved regarding whether the environment will remain competitive after one party gains control over the FTTN system. The concern of some is that the technology will be sufficiently dominant (relative to wired, wireless and coaxial competitors), and will replace elements of the current ADSL and VDSL copper technology such that a reduction in competition and increase in cost may be an unintended consequence of the FTTN rollout. The impact for many Australians of new access to fibre in combination with an aggressive separate cable broadband supplier(s) will be highly advantageous, not least because Telstra cables already run past 2.5 million homes and Optus HFC past 2 million homes.

Competition is all about pricing and service quality at the margin, and with the vast majority of Australians having potential access to ADSL/fibre connections as well as cable modems, there is scope for extracting far more competitive outcomes. While fibre may make many copper/ADSL connections obsolete, cable modems armed with new DOCSIS 3.0 and other technology will make for aggressive pricing on fibre, cable, wireless (including mobiles) and copper.

There is no great merit in forcing structural separation of Telstra – the copper network from voice and ADSL services, for example, given vertical synergies and investment coordination advantages. However, in the event of Telstra or Terria winning the FTTN tender, the quid pro quo should be:

1. Divestment of Telstra's interest in the HFC cable and Foxtel systems, and in the event Terria wins a similar divestment by Optus of its interest in HFC cable. There will need to be a careful implementation of separation of the cable system from the owners of the fibre network, so that systems work well through the transition and the incumbent power is managed responsibly. For example, all systems will be dependent on key elements of the Telstra system, such as backhaul for mobile systems,[3] and there is a need for the ACCC to monitor transition as a condition for the winning party gaining control of the FTTN.
2. Retention of and continued wholesale access to the copper network on an ongoing basis as part of competition, at least in transition or where that is technically possible and commercially sound. The complexity of linkages between the copper and fibre networks under a Terria win will be substantial. The competitive benefits of the new system will be greatly facilitated by separation of the HFC

cable systems and the increasing capacity, coverage and speed of the new mobile networks (for example, Optus claims its mobile network will cover 98 per cent of Australians by 2009, creating real competition with Telstra's NextG, Vodafone and other systems).

While there should be no permanent obstacle to replacement of copper by fibre, any request to remove copper as part of the rollout of fibre should be a matter for ACCC review in locations where ADSL and VDSL will offer fast service at a lower cost.

The rollout of the fibre network currently under tender needs to be adapted to local situations and options. In some remote and subsidised cases the current access via copper, NextG or satellite phones will make the rollout inefficient and/or redundant. While there may be a case for elements of subsidy for non-fibre services to certain remote customers, the quality of mobile services is rapidly approaching standards and costs that may make subsidies inappropriate.

What is at stake in the 'four doors' competition is far more than the telecommunications processes. It is the set of platforms on which our news media, entertainment, geographical and group information are based – to mention a few examples. At the recent Olympics, unfavourable coverage outcomes were flagged in Australia compared to countries such as Canada and the Netherlands. The failure to have implemented truly fast and competitive broadband meant Australians could not choose between the eight or more Olympic event offerings on the internet elsewhere, but were rationed a limited fixed allocation for a few hours on Yahoo7. With new phones and other digital computer devices providing exciting options, the key is the underlying and multiple sources of bandwidth – something Australians are starting to appreciate as an area where we lag.

While we question the need for the proposed $4.7 billion subsidy the Rudd Government has proposed for the broadband network, there is merit in a backfill fund for those in areas that will otherwise miss out on quality participation in the information age. It is most unlikely that these groups would best be connected to the FTTN system, given cheaper and better possibilities. Additionally, these groups should be few given the affordable coverage and quality possible via new mobile (98 per cent) and some cases ultra remote satellite systems (2 per cent). Other elements for subsidy might include telemedicine and educational networks where external benefits are demonstrated to be substantial.

1.6 Conclusion

1. CEDA proposes that broadband policy needs to be more pro-competitive via the 'four doors to competition' in information policy – a real competition model, based around alternative telecommunication infrastructures that deliver the digital signals that are repackaged in various devices (land phones, mobile devices, TVs, computers, newspapers).

   These 'four doors' are:
   i. Copper telephone lines (ADSL and VDSL)
   ii. Wireless systems (mobiles, WiMax, satellite)
   iii. Hybrid fibre-coaxial (HFC) cable
   iv. Fibre systems, including the fibre-to-the-node (FTTN) network.

2. While there are other possibilities – for example, telecommunications conveyed via electricity wires[4] – they have been left aside for the moment as experimental. At present, many participants complain about the market power of Telstra – just as Telstra complains about an excessive and overly discretionary regulatory framework from the ACCC. There is some truth in both positions. In reality the legacy systems mean there is 'no show without Telstra'. The strong natural monopoly element of copper's 'last mile', future fibre cable (to node or premise) and backhaul requirements of sub-networks means there is a case for access pricing and other forms of regulation for at least a few years. But, as Telstra argues, these regulations have to facilitate investment as well as competition – and there has to be greater predictability of pro-competitive regulation if risks are to be lowered and the costs of capital more encouraging of investment.

3. Overall, there is now the basis for real competition across and within the four doors, and the prospect of these doors themselves being able to operate relatively free of regulation within a few years. The reality is that telecommunications regulation has not been able to keep up with technology, and the only certain thing is surprise from new technologies. Extra-ordinary speeds like 100 Mbps are now in process for both mobiles and copper, with much higher from fibre.

4. Regulatory certainty is the key to lowering the cost of capital for all infrastructure, including digital communications, because if investment is to come from various pension and other long-term funds, the capital cost is lower as the income stream to the investor is more certain. But there is a trade-off. Providing regulatory certainty that enables companies to invest more because of a lower capital cost is not worth it if that means customers miss out on competitive and cheaper telecommunications.

5. Telstra's pre-submission on the current fibre tender argues that existing copper connections should be removed as FTTN or FTTP connections are installed. The effect of this could be to prevent ADSL competing with fibre in some areas where many are increasingly happy with ADSL2+, and VDSL in the future with its potential speed capability, within a few kilometres of exchanges. While there are technical issues, independent experts confirm that it is often unwise to destroy a copper network to ease the financing of FTTN.

   Even more important is a requirement that coaxial competition – the 'lost opportunity in Australia' – should be reactivated by requiring the FTTN winner to divest its stake in HFC cables and (Foxtel) systems. Encouraging the cable owners to make full use of cable will reactivate what should have been real broadband competition from FTC cable systems – as European, and North American cable systems exemplify.

6. CEDA proposes a model in which Telstra can thrive in real competition across copper, coaxial, wireless and fibre. The tender is also the opportunity to get the market settings right. Telstra's complaints about the ACCC over-regulating and the excessive discretion of the ACCC have real force. CEDA sees scope for each door to be a genuine source of digital competition. In combination they can create a digitally rich and more exciting cultural and competitive Australia.

7. The virtue of the wireless nature of much new technology is that we are probably converging, in terms of outputs and services, on outcomes that can be delivered anywhere. After all, as noted above, with digital communications it is just 0s and 1s in differing packages which are sent and switched around by dramatic new and cheap computing power, received and then transformed by devices as varied as phones, water pipes, television sets, computers and transport vehicles.

8. It is a new and digital age, but until now with the same old politics. What is new is that the same technology that keeps changing is moving in but one direction – that of providing each individual in the world with access to a near infinity of digital information. This makes education policy and how to use information as central as the telecommunications vehicle itself. What is needed is access to assistance platforms, education and training on how to use and benefit from the digital age, and insurances against the negatives that arise.

This institutional and training access, as much as access to fibre, is a valid use of any available subsidy.

9. CEDA presents a neutral perspective on information policy (much broader than telecommunications or broadband policy) – knowing full well that these settings will need to change as technology changes. Governments need to do as little as possible to get in the way of new opportunities – restricting themselves to facilitating competition in accessing and using information, and preventing abuse of market power.

10. In effect, information 'trains' now go everywhere at near infinite speeds, with messages split up into packets and then re-formed by computers along the way and at the final destination in text, music, images and so forth. Given the nature of the information, and the subtlety and power of some digital concepts, it is no wonder that the much-lobbied governments have been getting it wrong. Information is power, and interest groups that make up our political system all want it first. That this whole digital arena includes the print and TV media highlights the centrality of the digital debate, with its capacity to package and send 0s and 1s anywhere.

11. With the benefit of hindsight, telecommunications have been a source of major policy errors by Australian governments over the last few decades. In part, the problem has been the gap between technical change, policy development and political understanding of a changing field. Wires, wireless, fibre, and satellites have all seen their own major communications revolutions as the microprocessor became a centrepiece of the working of all devices save tin cans linked by string. Receiver systems such as mobile phones and computers, and conduits such as the internet, may have become household words, but the doors to them are often not understood.

12. CEDA seeks a role in bridging the gap between technical change and policy understanding. It has no special interest axe to grind in this or other debates, save to facilitate serious discussion of options for how the development of Australia as a society can be assisted by the benefits competition and technology. Policy and the regulatory framework need to be set in a manner that enables us to choose the best options.

Endnotes

1. NOKIA Siemens has announced it would deliver fourth-generation-ready (4G) mobile network hardware to more than 10 major operators by the end of this year, a technology that can be upgraded into what is described as faster Long-Term Evolution (LTE) technology.

2. One such wireless example is Meraki, as implemented for example in Prestonsburg, Kentucky, US. Meraki provides wireless services to an entire city and outlying valliess and can provide connectivity to underserved communities for education and telemedicine applications. Meraki boasts coverage across two linear miles of city and nearby rural areas, in a network with 6,000 regular users and with free WiFi for businesses and households (see http://meraki.com/solutions/cs/prestonsburg)

3. 'Backhaul' relates to the intermediate links between the core network and the small sub-networks at the borders of the fibre or copper network. As an example, mobile phones communicating with a single cell tower are what is called a local sub-network, and the connection between the tower and the external world starts with a backhaul link to the core of the (Telstra) network (via a point of presence).

4. A fifth and more experimental door is broadband via electrical wires, an attractive option given all homes have power lines and that internal wires can act as a network. High-speed connections of up to 3Mbps are touted, but there are concerns regarding interference such that the best label to date is experimental. As with earlier decades, it seems true that telecommunications is always subject to innovation and major change, with the danger that regulation deals with old problems and prevents new solutions.

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Information document

**Australia's
Broadband Future:**
Research publication
and launch event

3 DECEMBER 2008 | SYDNEY

about CEDA
Research

CEDA is focusing on some of the key areas of pressing economic and institutional reform that face Australian Governments over the next three years. We have done this through consultation with CEDA members as well as key business, academic and community leaders. Each identified research project has impact for Australia's economic well being and spin- off benefits for the wider community.

With the appointment of Dr Michael Porter to the role of Director, CEDA Research, to lead the organisation's research agenda and policy activities, CEDA has also embarked on a plan to harness its convening power across all sectors of the community, to enhance its reputation as an objective and credible participant in Australian public policy debate.

The Information Economy will be the subject of one of CEDA's major research areas this year. We will be releasing a report on the structural and institutional challenges in the broadband space at a major forum in Sydney on 3 December 2008.

about this research project

The Federal Government is about to make some significant decisions in relation to the roll out of an optic fibre and broadband network. CEDA's publication will touch on some of the key issues surrounding the Government's broadband tender process. The publication will bring together the best local and international thinking in relation to the optimal regulatory framework for this roll out . Communications channels that are based on competing infrastructure models will provide the best cost effective outcomes for the city and remote communities; these can be major benefits such as for telemedicine and remote education. The models need public policy debate to ensure the best policy framework is adopted.

This research collection will include contributions and pertinent perspectives on broadband and the regulatory framework from the following distinguished scholars:

BROADBAND IN THE USA
By Jeffrey A Eisenach

Jeffrey A Eisenach is Chairman of Criterion Economics, LLC, a Washington, DC-based economic consulting firm, and an Adjunct Professor at George Mason University Law School. He previously served on the faculties at Harvard University's Kennedy School of Government and Virginia Tech University, and as Chairman of CapAnalysis LLC. Dr Eisenach has testified before the US Congress, the Federal Communications Commission, and several state regulatory commissions. He serves on the Board of Directors of The Progress & Freedom Foundation and on the Advisory Board of the Pew Project on the Internet and American Life. He received his PhD in Economics from the University of Virginia.

committee for economic development of australia

THE LOCAL BROADBAND IMPERATIVE
By Joshua Gans

Professor Joshua Gans is Professor of Management (Information Economics) at Melbourne Business School in the University of Melbourne, and Acting Director of the Intellectual Property Research Institute of Australia (IPRIA). His fields of interest include managerial economics, the economics of innovation, competition and regulation, incentives and contracts and advanced game theory. Professor Gans is also founder and director of economic consultancy CoRE Research, and maintains one of Australia's most prominent economics Web logs, economics.com.au

REGULATING BROADBAND SERVICES
By Jim Holmes

Jim Holmes has a long association with telecommunications regulation in Australia, commencing during the course of his career with Telstra and its predecessor organisations. He was Director, Regulatory Affairs in Telecom Australia from 1984 to 1992. He worked for Ovum, the international consultancy and research firm for 10 years until September 2007 where he was, respectively, Principal Consultant and Director, Global Telecommunications Regulation and Policy Consulting Practice. He is now a Director of Incyte Consulting, specialising in telecommunications regulation and policy. Jim has a B.A. (Sydney, 1967), LL.B. (Hons) (Melbourne, 1979) and LL.M. (Monash, 1984). He has consulted widely to government, regulator and enterprise clients in Australia, Europe, Africa and Asia.

CREATING THE BROADBAND NETWORK
By Martin Cave

Martin Cave is Professor and Director of the Centre for Management under Regulation, Warwick Business School. He specialises in regulatory economics. He is co-author of Understanding Regulation (1999) and Essentials of Modern Spectrum Management (2007), co-editor of the Handbook of Telecommunications Economics Vol. 1 (2002) and Vol. 2 (2005), Digital Broadcasting (2006) and the Oxford Handbook of Regulation (forthcoming). He has also undertaken studies for the European Commission and advised regulatory agencies and companies in Australia, Canada, France, Germany, Greece, New Zealand, Portugal, Romania, Sweden, Singapore, the UK and elsewhere. He is responsible for two independent reviews of spectrum management carried out for the UK Government. In 2006 he was special adviser to the European Commissioner for Information Society and Broadcasting.

AUSTRALIA'S TELECOMMUNICATIONS MESS - HOW TO FIX IT

By Henry Ergas

Henry Ergas headed the OECD Secretary-General's Task Force on Structural Adjustment, which concentrated on improving the efficiency of government policies. Since leaving the OECD, Henry's work has focused on competition policy and regulatory economics. He has been closely involved in dealing with regulatory issues in a range of industries, including telecommunications, electricity, aviation, surface transport, and financial services. Henry was the founder and Managing Director of the Network Economics Consulting Group (NECG) Pty Ltd, which became part of CRA in November 2004.

Henry Ergas is currently the Chairman of Concept Economics, an economics consultancy firm with offices in Canberra and Sydney. He is also a Professor in the Faculty of Economics at Monash University in Melbourne, and a Lay Member of the New Zealand High Court.

FOUR DOORS TO BROADBAND COMPETITION IN AUSTRALIA

By Michael Porter

Michael is Director, CEDA Research and Chairman of Tasman Asia Pacific. Michael has worked with the IMF, The US Federal Reserve, The Reserve Bank of Australia, and senior economic adviser with The Priorities Review Staff of the Department of PM and Cabinet. Michael has a PhD from Stanford and taught at Yale (Irving Fisher Professor, 1978-9), Stanford, Monash and ANU. As founding Director of the Centre of Policy Studies, an early publication was Telecommunications in Australia – Competition or Monopoly? Michael also formed the Tasman Institute and was leader of Project Victoria, which prepared reform agendas on the reform and privatization of state owned enterprises in Victoria. Michael was Division Director, Infrastructure at Macquarie Bank 1998-2002, and chaired the Asia Pacific Infrastructure Forum held in Melbourne in Dec 2004. One role included preparing an assessment of the Asia infrastructure situation post the 1997 crises for APEC leaders, a Report funded by the Asian Development Bank and delivered to the APEC Finance Ministers meeting in KL 1999.

the report's impact on public policy deliberations

Around 800 organisations across Australia are CEDA members – a unique, influential group of leaders from business, government, academic and community organisations. The current membership base is a specialised target market of Australia's senior decision-makers.

Broadband is now on "fast track" as a significant infrastructure priority after the recent COAG meeting in Perth. Interest will be intense as to how the economy will be best served by this Governments initiative and the requirement to get it right.

The findings of the CEDA Paper will be released shortly after the tender review process has concluded and prior to Federal Cabinet deliberations on the review panel's recommendations. The release of the collection is timed to have maximum impact amongst senior policy decision makers and media coverage.

As part of the release of this collection CEDA intends to embark on an extensive round of discussions with senior politicians and bureaucrats as well as senior media commentators on the policy options put in the collection.

committee for economic development of australia

launch event

When: Wednesday, 3 December 2008

Where: Shangri-la Hotel, Sydney

Format: Extended lunch (11.00am – 2.15pm)

Agenda and speakers (tentative)

11.00   **Registration**

11.15   **Welcome**
David Byers, Chief Executive, CEDA

11.20   **Introduction by research sponsor**

Overview Sessions (Chair – Research Sponsor)

11.25   **Australia's Broadband Challenge: Findings from the CEDA research**
Dr Michael Porter, Director, CEDA Research

11.35   **The Overseas Experience (via videolink to USA)**
Dr Jeffrey Eisenach, Chairman, Criterion Economics,

11.55   **Regulatory challenges**
Ed Willett, Commissioner, ACCC

12.15   **Discussion**

12.30   **Lunch**

Commentary (Chair & Facilitator – Alan Kohler)
(to be approached)

13.00   **Sol Trujillo, CEO, Telstra (or senior Telstra executive)**

13.10   **Paul O'Sullivan, Chief Executive, Optus**
(or senior Optus executive)

13.20   **Panel discussion and debate**

- Joshua Gans, Professor of Management – Information Economics, Melbourne Business School
- Henry Ergas, Chairman, Concept Economics
- Joe Pollard, CEO, ninemsn
- Mark Scott, Managing Director, ABC
- Dr Michael Porter, Director, CEDA Research

14.10   Vote of Thanks and Close

14.15   **Close**

about CEDA

For nearly 50 years, CEDA has informed, influenced and raised the standard of discussion about the issues shaping Australia's economic and social development.

We do this by:

- publishing independent research
- providing a forum for debate and discussion
- offering a membership network to people and organisations that value knowledge, insights and ideas in Australia's best interests.

CEDA is an independent not-for-profit organisation. Our funding comes from membership fees, events, research grants and sponsorship.

Independent research

CEDA Research is independent and collaborative. We engage the brightest minds to come up with the best ideas for improving Australia's economy. CEDA Research produces a range of reports each year on issues fundamental to Australia's economic development.

Policy forum

CEDA has a unique role. We offer an independent and open forum – through our events, conferences and briefings – for business, government and academia to come together to discuss Australia's future.

Membership association

CEDA members are well connected and well-informed on economic, business and public policy issues. More than 800 of Australia's leading organisations belong to CEDA.

Our objectives

CEDA advances Australia's economic development by:

- engaging the brightest minds in the search for the best policy ideas
- informing our members on long-term economic, business and policy issues
- identifying business best practices, enabling leaders to make better decisions
- influencing policy making with independent ideas delivered in an understandable, accessible format.

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Digital dream or snipped dog?

The NBN deal may hand a huge level of government-backed market power to NBN Co and Telstra, writes **Michael Porter**.

While it is true that governments, ministers and their agencies can do "deals", these usually end up costing customers more than competitive outcomes from a well-structured market. And the devil is in the detail — more so in this case than most.

It is early days for a government keen to be seen to be doing deals, despite the problem that it is these sorts of deals that gave us the Telstra monster in all telecom and broadband markets.

Governments should focus on market structure and competition — with competition across systems and companies. In the past they ignored pro-competition decisions re Aussat and Foxtel — and so the Telstra pseudo monopoly grew at the hand of government. The question with the latest deal from a Rudd government desperate to show it can deal a neat hand is whether it is throwing out the competition baby with the copper and cable bathwater?

Many customers could well be happy with emerging very fast speeds on ADSL copper and DOCSIS3 on Foxtel cable. True, the "deal" may enable some to keep these services for eight years, but the curtain is set to drop. We are being promised a less competitive but digitally faster future. Costs could explode when they should be collapsing.

What the Australian Competition and Consumer Commission will need to pursue is the question of whether copper is to be snipped, and cables cut, on the national broadband network Holy Grail. In the case of telecommunications and broadband, we have long needed what other countries have — a real market where there is competition between wired (ADSL) connections, wireless

Telstra's dominance of the market is not its fault, but its dominance has made it inefficient.
Photo: LOUIE DOUVIS

(mobiles), cable (Foxtel modems offering speeds over 100Mmbs) and of course the fastest of all — fibre.

But note the cost of the fibre model via the NBN is estimated at $43 billion, plus what customers may have to pay to connect! It could be around $200 per home connection to the street and $100 per month.

The good news of course is that the announcement of a deal between NBN Co and Telstra will salvage some value for Telstra's unfortunate shareholders. But will it deliver real competition?

The immediate access to Telstra's ducts for the construction stage may well save many billions of dollars and reduce digging in the streets. But what is also proposed is to cut off customers' copper connections and to refuse cable connections to broadband after eight years. So it's reduced competition down the track. That's hard to take after we have been denied competition for a decade by earlier decisions.

Yes — the deal may avoid yet

further repetitions of wasteful investment in telecommunications — following "deals" by ministers Kim Beazley and Richard Alston. The ministers between them created one of the few structures that entrenched the incumbent Telstra in all "four doors" to broadband: copper, cable, fibre and wireless.

Telstra's dominant position in all markets is not its fault. But the resulting dominance has made it inefficient and, until recently, complacent. One example of failure to create competitive pressure for Telstra is that successive governments failed to separate Foxtel cable from the Telstra portfolio, which could have created very fast broadband for 3 million people with little new investment. We could have seen competitive companies formed from the Telstra monster.

Where competition has been facilitated, in mobiles, we see spectacular growth, and this can only get better as 4G speeds explode following auction of

television and other bandwidth.

What will be a challenge for the deal, and the ACCC in particular, is the response to a heads of agreement that involves Telstra deactivating cable broadband customers and snipping the copper that delivers ADSL to homes. In effect, Rudd and Communications Minister Stephen Conroy in endorsing this deal may be creating enormous government-backed market power for NBN (wholesale) and Telstra (retail) in the non-mobiles market. For example, Telstra will set access costs for the ducts used by NBN, and the costs of using cable via Foxtel, for eight years.

Most of Europe and North America is getting far faster broadband than Australia — courtesy of competition between cable, fibre and ADSL modems, under competition.

■ *Michael Porter is the director, research and policy, at the Committee for Economic Development of Australia.*

Unfair dismissal for CEOs

Fiona Inverarity

It appears Mark McInnes has done what most CEOs do when faced with a dispute with the board: negotiate a settlement of his contract. Perhaps one of the factors motivating David Jones in such a negotiation was one of the new backdoor unfair dismissal actions by CEOs and senior executives.

Previously, only employees earning less than $108,000 could launch unfair dismissal claims. CEOs and senior executives had to begin expensive and lengthy breach of contract cases if they were dismissed. If their employment was being threatened and they had short notice periods they had really nowhere to go. Incentives that form a big part of packages can easily be contractually unattainable if an employer wants to play hard ball.

Now, thanks to the new definitions of "adverse actions" in the Fair Work Act, all employees under the national employment system — regardless of income — can seek remedies in relation to their dismissal if they can establish it related to their "workplace rights".

Workplace rights are defined very widely in the new legislation and damages that can be awarded in unfair dismissal actions related to

CEOs may delay termination if they can claim breach of 'workplace rights'.

workplace rights are not limited to 26 weeks. This opens the door for senior executives to seek potentially unlimited damages. A "workplace right" could be a claim by a person that they are complaining about bullying or safety issues and are then dismissed for other reasons.

Examples so far of this new type of action are a CEO alleging that she

Conroy's milking hertz too much

Regional auctions should be held for broadband, not just spectrum,

writes **Michael Porter**.

The federal government is seeking fees of $1.4 billion from Telstra and Vodafone for the renewal of 800 MHz spectrum licences that are expiring in 2013.

This spectrum band is extremely valuable. It is used to service growing demand for data-intensive services to iPads, mobile phones and other wireless services that are exploding in terms of data usage, as the market demonstrates the value placed on portability.

Realising this value, Broadband Minister Stephen Conroy wants to auction the spectrum to boost budget revenues. If the companies object to paying the fees, he has told them he will auction the licences, which could bring in new players.

But the real issue is that Conroy has chosen to spend $37 billion on the wrong broadband model. Many customers who are not that desperate for faster home broadband via the national broadband network are cranky as their 3G and ADSL data services become grindingly slow under the seasonal surge in demand in coastal and holiday areas. Dongles and 3G services are being renamed Doodles or BoonDongles, as people go to sleep awaiting downloads such as news, e-books and sports information.

The beach-based demands via iPhones, iPads and other wireless services reveal the absurdity of a centralised roll-out of fibre as the broadband solution.

Both the suggested charges to Telstra and Vodafone, and the threatened auctions, confirm Conroy is aware that it is the structure (wireless versus fixed services) and location of demand that are the burning issues, not the need for an almost uniform force-feed of fibre via the NBN.

The inadequate bandwidth and speed in coastal and rural communities suggests auction demand for the bandwidth should be substantial. But uncertainty across the broadband market is stopping private investment and making a mockery of current priorities.

Communities wait for the big-spending NBN to roll by, rather than localise a solution in a tender to the NBN that will fit with a national market. And as revealed in *The Australian Financial Review* yesterday, the charges demanded by Conroy for spectrum are far in excess of those charged in much higher density markets, with the minor exception of Hong Kong, which is blessed with an extreme density of mobile customers.

Public consultation on the issuing of 15-year spectrum licences closes on January 16 and the timing is right to reconsider the regional tendering process. Apart from the dash-for-cash, given a projected $37 billion commonwealth deficit, there are problems with Conroy's approach:

■ The sheer inconsistency of competitively auctioning one element but not allowing competitive supply of a mix of wired, fibre, cable or wireless to be built in light of local assets and conditions (as in most foreign locations).

■ The imposition of a single model — NBN fibre for 93 per cent of us — when there is clear scope for competitive private provision area by area, without trashing existing assets and investor opportunities.

■ The resulting uncertainty facing market competitors that is already killing non-NBN private investment, as we all wait for the Holy Grail of the NBN to pass our premise, offering "free access" at taxpayer expense.

■ The simultaneous destruction of capital — copper and hybrid fibre coaxial (HFC) cable — and restrictions on marketing wireless. This existing and expanding capital could provide immediate and improved competitive services as part of the private nationwide upgrade of broadband services within an NBN-style framework.

Why not call tenders for the broadband rights for the many distinct areas, each with varying current endowments of existing services? Why should each area not be the basis for a tender for local connections that can blend into a competitive national broadband framework rather than a monopolistic NBN?

The minister is right to flag the option of competitive auctions — but not in a selective milking of the 800 MHz band.

■ *Michael Porter is research professor of public policy at the Alfred Deakin Research Institute at Deakin University.*

The charges for spectrum are far in excess of those charged in much higher density markets.

NBN is a $43 billion mistake

Michael Porter

Michael Porter is the national director, research and policy, of the Committee for Economic Development of Australia.

The main problem with the forced feeding of fibre as part of Telecommunications Minister Stephen Conroy's national broadband network is that faster internet is happening anyway. Self-financed. But he is using his power to create an expensive new telecoms monster that he will need to protect. And he is unwittingly destroying community wealth – and so undermining Telstra shareholders who have assets that should form the core of separate competitive broadband entities.

There are many ways to meet the needs for fast digital information. While it is true that fibre-optic cable is the fastest vehicle for digital signals, that is not correct per dollar spent. Massive 100-plus Mbps speeds are now on offer in Melbourne via hybrid fibre-coaxial cable and Foxtel – but take-up is minimal – suggesting there are issues with pricing, packaging and (most of all) demand.

Other countries are running trials – paid, for example, by Google in the United States – where up to 500,000 houses will be provided 1 gigabit speeds for free as a test. But Conroy wants to spend up to $43 billion of our money on new fibre when we already have fast systems in existence or ones that are increasingly available and affordable.

People are increasingly capable of accessing efficient broadband to suit their tastes through what we at the Committee for Economic Development of Australia have labelled "Four Doors" – mobiles, cable, ADSL wires and, of course, fibre. Fibre is already rolled out extensively but not universally. Rather than force-feeding fibre, the government should be enabling competition and perhaps subsidising some remote connections in exchange for reforms and unbundling of Telstra.

Most people are happy with current speeds but have complaints about price and lousy service from phone and internet companies. There is a need for better service in many areas, but this doesn't mean there's need for a government-owned NBN rollout financed by taxes or debt.

The one product in our community that can self-finance is digital information, as new internet-based services and television are bargains and the deals and options will only get better. But not when packaged with an uncosted and unevaluated spending of tens of billions of dollars.

Most informed assessments of the NBN rollout are that it is foolhardy and unnecessary.

It's also seen as irresponsibly smashing the capital base of Telstra, something that I as an economist and shareholder deem unnecessary. There are risks in the broadband space, and since Telstra is in all the "Four Doors", a share split is a sound way of allowing Telstra shareholders to gain from all the parts they like – and not be forced into submission to whatever role is left for Telstra. No, they could now participate as shareholders in *all* the different markets for broadband.

The government should allow Telstra to develop what may be called an NBN using its ducts and existing fibre, conditional only on a separate share split – whereby shareholders get three shares at the price of one Telstra share. Let's tentatively assume Telstra would label those shares as MobileTel (3G, 4G), CableTel (for the shares in Foxtel assets) and NBNTel (for the new access rights, copper and fibre assets folded in).

Let's get on with it. Who would lose? Taxpayers would certainly gain, as would Telstra shareholders if the new broadband space became truly dynamic and expansive. All existing telcos would face genuine competition and not from a government-owned NBN.

Is it not far better that the government draw a line over the past and enable or assist a split, so Telstra shareholders initially own these three separate shareholdings? The NBNTel shares would reflect a generous but market-based valuation from folding in the Telstra key copper assets, ducts and access points to get the show on the road.

It is clear to most in Melbourne that with cable down almost every street (due to Telstra and Optus) we can have very fast broadband via Foxtel using data over cable service interface specification 3.0. The emerging 4G mobile standard means wireless broadband options will also be fast and competitive.

This strategy will make mobiles, TVs, iPhones, iPads and other computer devices fabulous information sources of the future, using fibre in all manner of delivery infrastructure – pipes, rail and sewers included!

Yet the government has mandated spending $43 billion on digging up the streets and hanging wires in trees. It is being rolled out in some electorates already, starting in a voter-ready Tasmania.

Does the federal government not need to get back to its economics texts and start to understand that competitive markets and private investment are the key – not more big spending? Does not Treasury need to ensure some modicum of a return to competitive sanity in the infrastructure and telecoms markets?

Can't we forget the Australian Competition and Consumer Commission in this case as we facilitate really competitive infrastructure?

Michael Porter is the national director, research and policy, of the Committee for Economic Development of Australia.
The Australian Financial Review

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Telecommunications euthanasia for $43 billion

Michael Porter

Mike Quigley, the chief executive of NBN Co, recently addressed
the Committee for Economic Development of Australia (CEDA) on the national broadband network rollout, in
all its technical brilliance. It's agreed, broadband is the future channel for information, and should be
accessible at high speeds across Australia. The question is how to do this efficiently and fairly, while also
creating beneficial competition in all related services and in the media.

The government and NBN trick is to make NBN stand up financially by banning hybrid-fibre coaxial (HFC)
cable from offering competitive broadband after eight years. The joker in the pack, however, is that over that
eight years Telstra may blossom using HFC while NBN falters commercially. The ashes of the NBN and the
fibre network may end up on the Telstra banner by 2018.

It is, of course, possible that the government, on advice from the Australian Competition and Consumer
Commission, will change tack and prevent further destruction of capital and actually promote competition
across telecommunications infrastructure as well as services. Meanwhile, Telstra is offering a competitive
broadband and TV package over the HFC cable system used by Foxtel.

If priced near the amortised cost, NBN will be unable to compete in the early years, which is no doubt why
neither the government nor the NBN has allowed consultants to look at the economic viability of the NBN. Just
stick it on the taxpayers!

The question sidestepped by both government and opposition is how to get competition between the new
fibre, existing cable and copper, and wireless (mobile, satellite and WiMax) systems. Both the Coalition and
Labor have a remarkable history of regulating to inadvertently create monopolies, and thus expensive
telecommunications. Now the NBN is potentially the Telecom of the future, warts and all.

The current plan is wasteful because it is a form of telecommunications euthanasia. Telstra's underground
HFC network is to be closed for broadband, but open to Foxtel, because cable is an early competitive threat
to NBN Co and offers 100 megabits per second for over 6 million to 8 million people in almost 3 million
metropolitan premises.

While Telstra will still own the HFC network, the plan is for Telstra to be paid for delivering Foxtel services and
for not delivering broadband. So much for economic competition and value for money. So much for evidence-
based reform. Graeme Samuel and the ACCC are sorely needed on this one.

Nothing was said by Quigley about costs to connect to NBN, nothing on costs to taxpayers, or the
opportunities forgone by decommissioning a working and fast cable system. These HFC cables are in the
ground and deliver Foxtel. And they could deliver broadband at about 10 times the speed most people get
through the fastest current broadband via ADSL2+, depending on numbers of users.

But rather than a potentially competitive cable business being floated and the value captured by Telstra and
Foxtel shareholders now, the "deal" initialled as a "heads of agreement" is one that gives Telstra some $11
billion-plus in cash over time, while customers get a new monopoly-based service some time in the next eight
years.

And if the NBN falls over, guess who could pick up the bits?

Telstra is well able to make life very tough for NBN just by packaging broadband, telephone service and
movies, as it is now doing via the T-Box

The $25 million for technical consultants required them to not comment on this NBN model, and only discuss
implementation options for getting to 98 per cent of the population. To quote page 1 of the McKinsey KPMG
report: "This report is written for those in the government who will make and implement decisions regarding
the NBN . . . It is not to be used or relied on by any other persons."

To quote the report, it does not:

Evaluate the government's policy objectives;

Evaluate the decision to implement the NBN via establishment of NBN Co;

Undertake a cost-benefit analysis of the macro-economic and social benefits that would result from the
implementation of a super fast broadband network.

There was no scope for commenting on a business that may survive by termination of others.

A private Porsche is being sent to the junkyard in favour of a government-owned Ferrari! Could this be fiscal farce, more suited to *Top Gear* than to fiscal rectitude?

Tony Abbott and the opposition now have a chance to create a better alternative, just by listening to sound advice from the ACCC , something they failed to do in government.

A careful reading of the heads of agreement between Telstra and NBN suggests Telstra is far from asleep. It has negotiated an eight year window to use the HFC cable for broadband as well as Foxtel. This may be long enough to bury the NBN financially in the metropolitan area, and avoid the expensive remote connections that should probably use 4G.

Meanwhile, the NBN expansion of backhaul fibre across the outer areas may mean that 4G in fact delivers the goods fast and relatively cheaply over mobiles. Another win for Telstra and 4G?

Michael Porter is the director of research and policy at CEDA.

The Australian Financial Review

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"NBN 2" - A Liberally Prioritised Rollout

REGIONS BEING LEFT BEHIND?

The NBN promise to the regions is proving difficult to deliver. Delivering a state of the art technology to every home in Australia after a discussion with the Prime Minister on an plane is not the needed preparation.

Yet that single Rudd meeting, absent Cabinet, was sufficient for Senator Conroy to get the wave forward – although belatedly it's a flag made out of red underpants. A flag that firms in the business have costed at over $80 billion more than a year ago.

It's not just delays. For some, options too are changing pre the NBN on the wireless front, both in speed and service quality, due to the rollout of 4G or LTE.

Telstra's 4G is increasingly available, whereas the NBN options in many cases are 5 years off (e.g. coastal areas). When NBN comes it will be late, possibly wireless not fibre, and in a fixed not mobile location.

Meanwhile many in metropolitan Australia get faster broadband, now including both 4G wireless and for many, fast HFC cable.

There are potentially a few million people who are scheduled to be on NBN fibre, but who could already get speeds of around 100Mbps. Money could be saved on a large scale and release funds for broadband in remote areas that need extra funding.

Increasingly people see merit in the New Zealand approach, since it involves a small tendering agency, Crown Fibre Holdings, (CFH), multiple tenders for differing regions from telecommunications companies, and a mix of fibre to nodes and premises depending on the local situation.

The Kiwi model has decentralised tenders by area, and allows fibre to node or premise depending on local situation.

Chorus (the wholesale and now separated part of Telecom NZ) after losing some tenders to CFH is now competing for rollout of tailored solutions.

The tendering state agency (Crown Fibre Holdings) breaks NZ into regions and seeks the best technology mix; not an imposed fibre to the premise outcome. Chorus has won tenders for 70% of connections.

Different regions are getting different companies, but all tendering to CFH, their version of an NBN. The expertise of Telecom NZ and others is not wasted and replaced by an inexperienced new entity.

In regional Australia there is growing likelihood of duplication of wireless 4G (from Telstra, Optus, iiNet and Voda) and fixed wireless or satellite from NBN and a promise of fibre being delivered to the many isolated parties that make up the 93% promise, at costs to taxpayers, not customers, of around $10,000 per premise!

Some parties frustrated at 3G and DSL last year are finding 4G a godsend this year.

Others in the HFC cable areas are now finding cable delivering 100 Mbps as opposed to less than 10 Mbps a year earlier. Yet others still await even ADSL 2+.

NEW ZEALAND DEMONSTRATES A CASE FOR ENGAGING A RANGE OF FIRMS

As noted briefly, what some parties have suggested is a model also used by the Key government in New Zealand where firms are invited by the wholesale fibre provider CFH to tender for the build of broadband services by region. (See John McDuling, 28/8/12 in the *AFR* and Paul Fletcher, MP 3/10/12 in *The Australian*).

The NZ model could belatedly be applied by the NBN, our designated wholesale and fibre gatekeeper.

We could, perhaps with the next government, yet see Telstra and other firms bidding a *package* of services *defined by speed and coverage, rather than technology*, with a number of successful tenderers around Australia able to mix and match technologies to achieve local solutions.

In this Kiwi-style unbundled but tendered scenario the actual services on offer in some regions could be enhanced by local government and university ultra-fast systems (such as Deakin's Eduroam access using AARNET and VERNET)

CAN THE PLANNED ROLLOUT ACCELERATE

The evidence from Australia and NZ is that higher speeds can be delivered well before the scheduled implementation of the NBN in many regions. The expedited model would invite tenders by speed and location, with mixes of technology, including the transitory options of ADSL2+ (new technology for many in regions) and 4G for wireless.

These options will offset the delay in speeding up very slow accounts, now facing NBN delays through 2019 in coastal Victoria.

But to get the priorities *and timing* right in upgrading existing broadband and installing fibre or fixed wireless, and/or Telstra installing 4G, is a complex task that requires local cooperation, not least between Telstra, the NBN and other communications companies choosing to tender. While the rollout will largely need to converge on a fibre system down the track, there still seems no imperative to halt the use of copper or wireless upgrades or force conversion from HFC cable.

The saving on rollout costs in some metropolitan areas with fast cable options *now* can fund a mix of new fibre, 4G and expanded use of state government and educational networks in selected regional areas.

HOW WOULD THE REGIONAL NBN PLUS MODEL WORK IN PRACTICE?

Competent regional parties could be invited by NBN to produce an upgrade, NBN Plus, that is more responsive to local preferences and assets. Accepting the NBN goals, but localising the execution and offerings and building on current assets or contracts signed by NBN, Telstra, Silcar and so forth,.

Many of the expanded options beyond the NBN are already self-financing such as 4G wireless, which could be expanded with budgetary support from resulting

savings in the NBN rollout.

Another more controversial option will also release resources through *not* overbuilding areas that can achieve speed and coverage at a lower cost, and that can upgrade *later* using the fibre in HFC networks. Exactly how this works will depend on contracts and opportunities, but there is clear evidence that many communities can delay rollout, and lower costs, by expanding usage of HFC cable, with an internal upgrade option.

The model will expedite investment in regional broadband by enabling tenders of local entities or telcos, subject to NBN validation. Universities, local and state governments that have broadband assets and networks, would be invited to submit proposals to the local NBN agency, thereby enhancing regional offerings.

THE EDUCATION REVOLUTION AND DIGITAL NETWORKS

There is scope for innovative educational institutions such as Deakin to offer broadband built around Eduroam and extension of capacity that uses some current fibre, new private and public sector fibre, and yes, the emerging NBN.

University systems like Deakin are built around gigabyte-plus networks, AARNET nationally and VERNET in Victoria, and other networks in other States. There are similar systems for business and medical/hospital networks. These localised options all make the point that there is an evolutionary path now to faster broadband in most metropolitan locations. States can move things along as well.

Deakin Live and Deakin-at-your-Doorstep for example, are educational networks for the community that will be able to blend in courses, some free, some from overseas, in a new world of competitive educational broadband.