

The right policy for telecommu- nications and broadband

Submission to the Senate Select Committee on the National Broadband Network

Authors: **Professor Joshua S. Gans**¹

Date: 18th June, 2009

¹ Professor of Management (Information Economics), Melbourne Business School, Email: J.Gans@unimelb.edu.au

About

The Melbourne Business School is one of the leading providers of management education in the Asia-Pacific. The Centre for Ideas and the Economy (or CITE) is a newly-created research centre residing within MBS. It is devoted to the creation and dissemination of academically evaluated, rigorous and practical policy ideas for application in the public and business spheres.

About the Author

Joshua Gans is an economics professor at Melbourne Business School in Australia. His research focuses on microeconomics, competition policy and innovation. He is the author of several textbooks and policy books, as well as numerous articles in economics journals. Gans received a Bachelor of Economics (Honours) and the University Medal from the University of Queensland before going to Stanford University to study for his Ph.D. in Economics. He graduated from Stanford in 1995 and moved to Melbourne Business School in 1996 as an Associate Professor and became a full Professor in 2000. In 2007, Gans received the inaugural young economist award from the Economic Society of Australia. This is an award given every two years to the best economist working in Australia, who is aged under 40.

Table of Contents

Introduction	1
The right reform	1
The advantages	2
Cost-benefit analysis	2
Implementation	4
Reprinted Opinion Pieces from November 2008	5

Introduction

I made a submission “Creating an Efficient National Broadband Network” to the previous Senate inquiry in September 2008. I also testified directly to that inquiry. In addition, I authored a major, CEDA commissioned study in 2006 on the best options for invest in broadband in Australia. The report, “The Local Broadband Imperative,” was appended to that submission.² In this new submission, I do not intend reiterate the messages I brought to the previous one as that was mainly in response to the Federal government’s previous fibre to the node plan. Here I consider the new proposal and its economic efficacy.

By way of summary, the goals of the current plan are appropriate to the economic circumstances in the Australian telecommunications industry. It represents a clear path for reform and for appropriate government intervention. In addition, its potential, social benefits -- which have not been emphasised in the debate on the plan -- are, in many respects, far more significant than the narrow focus on broadband speeds.

The right reform

Australia lags behind in broadband speed and investment compared with the leaders in the OECD. In particular, broadband costs are higher than most OECD countries and, in addition, users are constrained in their use because of the imposition of usage caps. It is well-recognised that these factors have been responsible for a lack of broadband development and applications in Australia.

The market failure at the heart of this had several dimensions. First, almost uniquely among the OECD we have a dominant telecommunications firm with the largest market shares in mobile telephony and internet service provision and a near monopoly in cable television and fixed line telecommunications. Second, regulation of that monopoly power has not been able to stimulate key infrastructure investment and has been the subject of considerable ‘regulatory gaming’ that has delayed such investment and hampered competitive processes from being used effectively. Third, the government role in broadband and telecommunications has been the subject of ambiguity and unclear policy goals. The combination of these factors are responsible for the problems we find ourselves in today.

In reaction to this, I wrote an opinion piece for the *Australian Financial Review* entitled “Plan B is 21st Century Communications.” That piece was the 6th of a multi-part series of opinion pieces I wrote in late November 2008. Those pieces are appended to this report. The last piece proposed the following:

So let’s think big. What if the government rejected all bids as inadequate and embarked on building its own NBN? And not just one with mid-range bandwidth but instead a ‘world best’ target for a change: 100Mbps or even 1Gbps speeds. This would likely require fibre to the home in most places and, in others, some serious mobile technology. It would probably cost in excess of \$15 billion but these costs would be spread over a number of years. An NBN could not be built in a day.

The costing was based on industry discussion over the previous years and was based on a fibre to the home network where population density made it concrete rather than to 90 percent of the population. Nonetheless, this is precisely the plan the Government has now proposed.

² Also available at http://ceda.com.au/public/publications/info_paper/ip_86.html

The advantages

The current NBN proposal potentially entails a large capital outlay for the government although, ultimately, this will be shared with private investors as well. However, in return for that, there are numerous advantages.

1. **Universality:** the government would control the price to users. This means that it could base that pricing on social rather than commercial goals -- for instance, it could target low income households more effectively. One possibility would be to make basic broadband (with speeds > 1Mbps) free and open to all households. This would mean that government policy in other areas -- e.g., education, health and social services -- could presume connectivity rather than rely on 'bricks and mortar' distribution. The savings elsewhere in the government from this could potentially be enormous.
2. **Competition:** the government's network will compete with existing carriers (notably Telstra) not just on broadband provision but for all telecommunications services. The fibre network would over-build Telstra's decades-old copper line and cable monopolies and provide real infrastructure-based choices for consumers.
3. **Regulation:** competition would mean that the complex regulations that result in gaming and other impediments in telecommunications could eventually be scaled back.
4. **Fiscal stimulus:** as an infrastructure plan in the current environment, building this network creates employment and takes advantage of the global economic slowdown for cheap equipment, fibre and cable casing so that the network can be built for the least cost. It would also ensure that when the global economy recovers, Australia is well-positioned with a renewed telecommunications industry.
5. **Optimisation:** building this new network gives the government the opportunity to optimise its plans. It could have a state-owned corporation do the entire job but there are other ways of designing this new market. For instance, the government could build or lease the backbone from existing providers (e.g., or acquire Telstra and Optus' cable networks). It could then use tax credits to encourage localised initiatives to build the last mile, connect neighbourhoods and even allow residential ownership of infrastructure into the home.³ This would allow a more appropriate mix of wired and wireless solutions to be employed and ensure that the network is cost effective.

As the appended opinion pieces demonstrate, I was critical of past government plans because they did not allow for technological flexibility, did not resolve regulatory issues, did not provide the potential for affordable broadband access and appeared to involve a continuation of the pattern in Australia of choosing the money rather than competition in telecommunications choices. The current plan and aspiration cuts through all of these criticisms with clear advantages.

Cost-benefit analysis

Many have been critical of the lack of a comprehensive cost-benefit analysis of the proposed National Broadband Network. In many respects, this is valid but it is also inappropriate given that its is a committed aspiration rather than a comprehensive set of implementation specifications. At the moment, given the options open to the government, it is not clear how to cost the project. That should not be an impediment to working out the policy details so future costings can be done in a transparent manner.

³ A similar proposal has come from Derek Slater (Google) and Tim Wu (Columbia), "Homes with Tails: What if you could own your Internet connection?" November 2008; http://www.newamerica.net/files/HomesWithTails_wu_slater.pdf

That said, many commentators have, in my opinion, focussed unduly on the issue of a commercial return. In my view, it is the social return that is relevant as this is a government policy and not a money making venture.

One issue in calculating the social return is whether the \$43 billion will be what is spent on the network or not. In particular, this depends on technology and population density as well as the progress of technology over the next 8 years. In addition, there are existing assets (such as the cable network) that could be part of the NBN and defray significant costs.

Nonetheless, if we take that figure as an upper-bound, commentators looking only at broadband have suggested that usage fees will be around \$200 per household per month for the service in order for the government to earn a commercial return. Clearly, it is not clear that there will be sufficient demand to generate that return on that basis. Indeed, if there was, a private investor may have already undertaken this investment.

Instead, let me provide an admittedly loose alternative view and 'back of the envelope calculations' that suggests that even at a cost of \$43 billion, the NBN could easily generate a significant social return. First, there are about 8 million households in Australia and by 2016 another million will likely be added. For various reasons let's suppose only 90 percent of them will spend money on telecommunications so we can use 7.2 million as a base. Second, it is not clear what the rate of return (commercial or otherwise) should be on the NBN. 10 percent is a number thrown around but that is a number after the whole network is complete. In any case, it is useful to think of yearly flows so let's take \$4.3 billion per annum as a desired target for revenues from this. Taking these two numbers together we have about \$600 per annum from households on average or \$50 per month. (By the way, if you desired rate of return was 15 percent, that number would rise to \$75 per month. Alternatively if only half of potential users use the NBN services, that becomes around \$1,200 per annum or \$100 per month per subscriber).

Can we justify this on the basis of broadband alone? Current expenditure per household on broadband is \$500 per annum, according to the ACMA.⁴ That said, that involves less internet penetration than I have assumed above (5.1 million subscribers) and so if currently internet penetration were to rise to 90 percent that would require a lower revenue take per household. On the other hand, the higher speed availability will increase the willingness to pay of households for the service. More interesting, is the ACMA's calculation that improvements in competition or other outcomes in the industry are netting us over \$300m per annum in additional consumer surplus or about \$60 per annum per subscriber household. Those gains accumulate and so if the NBN generated additional gains of the same order, the social returns might be there.

Once we add wired communications in general, there is another \$7.65 billion being spent or \$765 per subscriber (of which around \$350 is in access charges alone and \$177 is in fixed to mobile charges). My belief is that this is where the NBN will have its biggest impact. Access charges may rise but more importantly, usage charges (other than to mobiles) will plummet — maybe to zero. If that occurs, the gain to consumer surplus is at least \$238 per subscriber but possible more like \$400 in total.

The issue here is that, the NBN may itself only capture revenue from say half of all potential customers. So the amount going to the NBN would be at most \$500 per annum per subscriber from broadband and, conservatively, \$527 from wired telecommunications. Spread over 3.6 million households that is annually \$1027, which is less than the \$1,200 required (a shortfall of \$320m). However, add the potential consumer surplus benefits which are spread over all households and there is another \$2.88 billion there from wired

⁴ http://www.acma.gov.au/WEB/STANDARD/pc=PC_311549

telecommunications alone (ignoring the broadband benefits). Thus, socially, the NBN even if taking just half the market, seems comfortably able to earn well beyond a 10 percent return.

Implementation

In conclusion, I wish to make a final remark about implementation. We should not take it as given that the NBN will be run, root to tip, by a single government-owned corporation. Instead, while I can imagine that the backbone network requires this to ensure open access and universal coverage, the path from local areas to homes is open to other models. One such model could utilise existing infrastructure while another might allow local-based initiatives from councils, entrepreneurs and carriers to connect neighbourhoods using both wired and wireless solutions. So long as basic government objectives of performance, cost and social access are met, we should not be concerned if the NBN is a mesh of inter-connected networks rather than a single-owned set of fibre.

I urge the Committee to ensure that the legislation is flexible enough to specific goals -- both social and technological -- and not be prescriptive as to the details of ownership and governance so long as those goals are met.

Reprinted Opinion Pieces from November 2008

Reprint: “Think carefully before leaping headlong on to the big, fast broadband wagon”

Joshua Gans, *The Age*, 10th November, 2008

Day One: The value of broadband

THIS month I am celebrating the 10th anniversary of broadband in my home. In 1998, I received my service through Telstra’s new BigPond Cable and today I still get my service through this way. I have been such a long and loyal customer that my username is so simple that it leaves the help desk in awe whenever I call in.

Things have changed, however. Back then I was lucky to be able to download at 32 kilobits per second (Kbps) and my download limit was just 100 megabytes (MB) a month. You might think that that didn’t go far but at those speeds, it didn’t have to.

I was able to send and receive emails and I could look at the news and weather. There was a benefit from being always on but that was it. And all this cost me about \$70 a month which, given local call costs, was not much more expensive than dial-up.

Today, my residential connection is probably the fastest in the country. At 40 megabits per second (Mbps), it leaves Telstra’s technical support in awe. And it is far more reliable now with little downtime.

I have ramped up my download limit to 60 gigabytes (GB) per month that I never get close to. Gone are the days of watching carefully large attachments or shying away from rich multimedia sites. And I now pay Telstra more for the privilege, \$129 a month.

In many respects, I am the consumer of whom broadband providers dream. I have the computing power to take advantage of multimedia websites and a sensitivity to technological frontiers that makes me willing to cough up for more speed just because it is there. It is precisely because most people are not like me that we do not have higher speed broadband connections around the country.

This is probably a good thing. My preferences are not wholly rational. For starters, while I can clock 40Mbps, that is for a local site. Try watching some video hosted internationally and the best I can get is usually 2Mbps. So, for the vast majority of content, I am paying a premium for potential speed that I never actually get. Put simply, that is perhaps a \$70-a-month gift to Telstra.

Eventually, our connectivity to the world will improve and so the potential will translate into the actual.

But until that happens my purchase of additional speed makes little sense.

It is in this context that in this series I will look at the broadband debate in Australia. The economics of broadband are as simple as supply and demand. To supply high-speed broadband services, an infrastructure provider needs enough customers willing to pay a premium for that speed above slower services that are ubiquitous around Australia. But technological bottlenecks, including international back-haul capacity as well as the speed of networking equipment in the household, stand in the way.

Apart from that, the case for higher speed is a hard sell. Snappier website loading is nice but we are still talking seconds of saving over basic broadband. With a high-speed connection, a TV-show-length video download might take 10 minutes (at the Government’s target of 12Mbps), up from 40 minutes for basic broadband. That is seemingly a significant saving but if you realise that with say, Apple’s iTunes Music Store or YouTube, you can start watching while you download, you perhaps save a few minutes with the faster connection.

While the economics, right now, do not appear to favour speeding up broadband, the politics is another matter.

Australia's politicians are not alone in finding that constituents desire high-speed broadband. It was a plank of Barack Obama's campaign even if he did not spell out how his goal of 20Mbps access across the US might be achieved. And it should not surprise us that they find an ally in the providers of such services, who see the opportunity to obtain a government subsidy for a commercially risky investment. That itself has led to a larger game that no one seems to be winning.

Joshua Gans is an economics professor at Melbourne Business School. See his 2006 CEDA report available at www.mbs.edu/jgans.

Reprint: "From a taxpayer's perspective, high-speed broadband is a high-odds gamble"

Joshua Gans, The Age, 11th November 2008

YESTERDAY I argued that, for most people, the economic value of higher speed broadband just isn't there. It is true, there are some parts of Australia where commerce and people are concentrated and in these areas, they value higher speed broadband and, not surprisingly, it has arrived.

But with the Federal Government proposing to spend \$4.7 billion of taxpayers' money so 98% of Australia has fibre-to-the-node connectivity, it is natural to query the likely public benefit.

It must first be acknowledged that the Government considers this an investment and expects a return, it does not consider it expenditure.

In my mind, it is unclear why and how the Government can earn such a return where private investors could not.

One possibility is that they intend to accompany the investment with a regulatory regime that restricts competition and thereby allows the National Broadband Network to exercise monopoly power.

However, it would seem that the Government would gain little from politically-unaffordable but universally-available broadband.

The more likely possibility is that it actually is expenditure, but the Government is justifying it on the basis of public, rather than private, benefits.

Both the current and the previous government argued that higher speed broadband investment would bring \$30 billion in benefits to the economy annually. Telstra has also quoted that figure.

However, that estimate is based on a 2001 Accenture study that itself utilised US estimates on the value of basic broadband. That value involved moving from very low broadband availability to 90%; which is what we already have in Australia. So that value is likely to be a vast over-statement.

Moreover, Telstra (which often argues that it is best placed to assess the value of these types of investments) has recently claimed that not investing in a fibre-to-the-node network is costing \$200 million per month in lost gross domestic product. While I am unsure of the basis for that estimate, what it does do is place the value of broadband at less than a 10th of the previously quoted figure.

That said, there may be additional benefits to increased broadband availability; such as in education and health care. The idea of a surgeon in Melbourne operating remotely on a patient in an isolated area is the picture of

what could be provided. But does that require us to hook up all households in the country or just to ensure there is a high-speed connection to town centres?

Moreover, we know that Australia is a laggard in broadband speeds. Many countries have near universal availability of high-speed connections. Indeed, Japan and South Korea have connections with 100Mbps (more than five-times higher than the Government's target). Surely we should be able to identify and measure the public benefits by looking at those countries?

The surveys show that those benefits simply are not there yet. To be sure, residents in those countries enjoy faster video downloads and more connectivity for internet gaming but these are not public goods. And it is true that small businesses in those countries do not have to worry as much about location if they require high-speed connections. But even here, a design export business can still operate, it just may not be able to operate from anywhere it chooses.

Some might argue that this scepticism represents short-term thinking and that the benefits will eventually arrive, that even if they are not currently defined, we will nevertheless be ready for them. But we have to remember who is footing the bill.

For starters, the Government's proposed service will likely cost as much for consumers as existing broadband. Even today, over 2 million subscribers remain on dial-up, despite the widespread availability of ADSL. Their revealed preference is not to pay for that. Moreover, because you need a state-of-the-art computer to take advantage of higher speeds, many middle to low-income households will miss out (25% of all households do not even have a computer). The problem is, as taxpayers, they will still pay for broadband while others (including myself) will get the subsidised benefit. It is Robin Hood in reverse and, from that perspective, an unfair gamble.

Joshua Gans is an economics professor at Melbourne Business School. He maintains a blog on these issues at economics.com.au.

Reprint: "Symmetry, no caps and roving usage will be real gains"

Joshua Gans, *The Age*, 12th November, 2008.

THE past two days I questioned the private and public value of broadband. It is perhaps more realistic to evaluate investment in high-speed broadband — at least 12Mbps across 98% of Australia — as a political objective. So, what is the most efficient way of achieving that objective?

To be sure, the Government has committed itself to more than just that: it has promised a wired solution where optic-fibre is used at least to the node (that is, many street corners). But my belief is no one would be fussed if an equivalent service was delivered by another means. After all, all subscribers see is what is on their computer screens; not how it got there.

There is more to broadband than just download speeds. For starters, there is upload speed. In Australia, most services to households are asymmetric in that they provide much more download bandwidth than upload. For instance, my house has 40 megabytes per second download speeds but often 1-2Mbps upload speed. You start to notice this if you want to upload photos or videos to the net as a form of backing up to a cloud computing facility.

But this would really matter if we wanted to use high-speed broadband for next-generation telecommunications and video conferencing. This is critical if we hope to use high-speed broadband to change work habits and

commuting patterns. Even the surgeon/remote patient example I mentioned the other day would rely on equally fast connections both ways. Of course, it is just this sort of two-way communication that would threaten existing telecoms. And since they are the same folk who want to provide broadband access, they have an inherent conflict.

A second critical aspect of the type of broadband we are getting is, of course, the usage limits. Overseas, these limits did not exist and whole businesses and consumer habits have grown on the basis that users don't have to worry about usage. Not so in Australia. The cause may be the high fees our providers pay for international backhaul. Or it may be a lack of competition that allows our providers to opt for pricing that requires those who use more to pay more. Regardless, we have lived with bandwidth limits.

The problem with this is that if you have a high-speed connection, those monthly limits look small indeed. For instance, if the one gigabyte limit that most households are on does not change with the National Broadband Network, you may be back on dial-up speeds within the first day of every month.

Finally, the problem with the fibre-optic broadband investment is that it fixes the service geographically. Consumer behaviour makes it clear that they place the highest value on connectivity precisely when they are not at home or work. People are willing to pay \$1 per MB for mobile voice services and a huge \$1000 per MB for mobile SMS but only about 10¢ per MB for the internet at home. From this perspective, the Government's fixation on connecting homes rather than people seems misplaced.

Wireless broadband services have taken off precisely for this reason. Providers are simply following the money. What is more, the speeds that can be achieved over spectrum, while not as great as a wired option, are well in excess of the Government's goals.

The terms and fine print of the Government's goal for high-speed broadband are at least as important as the goal itself. Whether it be provision for symmetric upload and download speeds to allow communication and not just connectivity, the lifting of caps on use or having open enough standards to allow for wireless access, it will be these factors that determine how efficient the investment will be.

Joshua Gans is an economics professor at Melbourne Business School. He testified before the Senate on these issues in October. For details, see www.mbs.edu/cite

Reprint: "Government has missed the message on telcos

Joshua Gans, *The Age*, 13th November, 2008.

IN THE history of telecommunications policy in Australia, no government has chosen long-term competition over short-term gain or convenience. It has long been known that the competitive problem in Australia and the reason we have ongoing regulation is that our core wired network is in the hands of a dominant firm, Telstra. And it holds a dominant position in the main substitute service, the cable network.

Time after time, government has had the opportunity to change this. In the late 1980s, Telecom could have been broken up, but instead only its international satellite arm was spun off to found Optus. In the 1990s, Telstra could have been excluded from pay TV and, before privatisation, Telstra could have been broken up. In each case, governments have gone for the money, and the result is we are one of the few countries where a single firm dominates all forms of telecommunications. We continue to pay for that.

For many years, I believed regulation could substitute for our mistakes on structure. The regulator would constrain Telstra's power in key segments and give newcomers breathing room to invest in services that would compete with Telstra. Where telecommunications use is most intense (in our CBDs) we have seen this and there is real competition. Other than that, only in mobiles have we really seen this, but this was an area where we got the structure correct at the start. This has changed my beliefs about what regulation can achieve.

If we had proper, infrastructure-based competition, we would have high-speed broadband across much of the country now. In this situation, the debate would be on how best to deliver broadband to areas too isolated for cost-effective private investment.

Instead, we have a regulatory morass. There appears to be only two serious bidders for the national broadband tender. For Terria, the Government would have to pass significant legislation and perhaps new regulations to try to avoid years of court battles as it tries to access Telstra's copper network. At the same time, Telstra is likely to compete directly with the new joint venture. But the Government will be unlikely to recoup its investment.

If the Government behaves like previous ones, it will go for a return on its investment rather than competition. The Government should go for competition. This will require spending money to ensure competitive outcomes but this is, at least, a solid economic rationale for that expenditure.

It could also pay for that competition by going the Telstra route. As a condition for receiving the \$4.7 billion, it could require Telstra to divest itself of its cable network and stake in Foxtel. That network would provide long-term competition in broadband for the national broadband network. It would reduce the need for a strong ongoing and heavy-handed regulatory regime.

Many economists argue that a light-handed approach is desirable. This could be achieved for the new network by ensuring an anchor product (say 5 Mbps and 10-gigabyte bandwidth limits) was regulated at a fixed retail price. Consumers would always have that option and any new providers with superior service would have to compete for consumers.

If some of these options could be considered, there is reason for hope in broadband. When we get the structure right, the need for costly regulation is removed. The ACCC has been deregulating more than regulating in the past few years. If the Government — by picking Terria or by choosing Telstra alongside some divestitures — chooses structure over the money, we can opt for a light-handed approach.

The winners will be consumers. After all, don't we want them to be connected rather than simply to have the option to do so?

Joshua Gans is an economics professor at Melbourne Business School and managing director of CoRE Research, an economics consultancy. He has advised the ACCC on telecommunications regulatory issues.

Reprint: "Behind every great fibre-optic network is a great package of applications"

Joshua Gans, *The Age*, 14th November, 2008.

OVER the past week, I have been reviewing the broadband policy debate. A theme has been what the Government should be using public money for. I questioned using it for faster video downloads as that was a low-value, private good.

I questioned using it to speculate on the future as it is likely the Government's preferred technology is below what would be required to future-proof the network. Moreover, the main beneficiaries will be the richer segments of society.

I questioned going just for download speed when the issues of upload speed, caps and mobility were just as important. Finally, I questioned the tender process and regulatory issues and argued that the Government had an opportunity to spend public money to ensure long-term competition rather than just to earn a return.

In this final article, I want to go beyond the issue of infrastructure. Broadband is much more than the wires and equipment. To use it you need internet services and applications. And it is here that the Government can fill market gaps and directly increase the value of broadband to consumers. By doing that, it can help make the case for public investment in the infrastructure and also reduce the level of investment required as consumers will be more willing to pay for their own service.

The Cutler review of the national innovation system has devoted much of its report to these issues. It lists broadband applications as a targeted area; proclaiming that the "Government needs to start with itself" the review argues: "Australia needs to ensure that the relevant applications — specific to local needs — are developed to leverage the infrastructure for the purpose of government policy."

These would include "applications in open democracy, database and privacy standards for health information, tools to facilitate educational use of broadband, traffic systems and standards, and national collections of information and knowledge".

Consider the often-touted benefits in terms of health care from broadband investments. While the publicity shots feature remote surgery, it is not clear that this is where the greatest benefit lies. Let's face it, the pressures that would require that event are, thankfully, not that frequent. Instead, it is the day-to-day medical needs of people that represent the greatest opportunity for improvement.

For example, consider a routine visit to your GP; say, to diagnose ear pain in a child. This requires bundling up your child, usually in the evening, and then a wait, perhaps up to an hour, for an unscheduled appointment. The GP will then examine your child's ear, proclaim an infection or not and prescribe pain killers or antibiotics. There is a cost in the GP's time and your time.

Suppose instead that you took a simple, already available \$15 device that connected via USB to your computer and allowed you to take a high-resolution picture in your child's ear. You then emailed it to the GP, who would provide the diagnosis or, if there was an issue, call you in to the surgery. More often than not, there would be no need of a visit. The savings in terms of time would be considerable for many households.

There are plenty of opportunities for remote diagnoses of a routine nature. Insulin levels, urine and maybe in the future, blood are all possible. The chief saving is of time. Moreover, with remote GPs, regional areas might have greater GP choice and certainly more accessibility. That is the promise of the internet.

You do not need a high-speed connection for these services. The costs of the technology in the home are relatively low. So, why don't we see it? The answer is a combination of reimbursement and liability. GPs can't get paid for these types of consultation and, even if they could, are exposed to medical liability that requires physical examinations. Both issues are within the control of the Government to reform. By doing so, this would open up e-health possibilities and add real value to our existing broadband infrastructure.

Government information is another issue. Much of it is locked away in a form that gives the Government control on how it is used. My favourite example is the Government's national toilet map, which requires you to be at a

desktop computer to access it. If that information were truly public, entrepreneurs could develop alternative access routes that would allow the information to be gathered from a mobile device. Let's face it, it is when you are out and about that you need this information.

Broadband networks are of dubious value on their own. But the Government has a real opportunity to reform things under its control and to allow services to develop as complements to its proposed infrastructure investment.

Joshua Gans is an economics professor and director of the Centre for Ideas and the Economy at Melbourne Business School. He was an external adviser to the Cutler review.

Reprint: "Plan B is 21st Century Communications"

Joshua Gans, *Australian Financial Review*, 24th November 2008

It is obvious to everyone that, despite the best of intentions, the National Broadband Network (NBN) tender process is not going to plan. \$4.7 billion being put on the table has sparked only limited interest and even that is fragile. Telstra is driving a hard public bargain on regulation and structural separation and may not participate. This is hardly a surprise as they are in a position to roll out their own network in the most profitable areas of the country and keep those profits for themselves. Other bidders, also not surprisingly, want to stop that from happening. It is a mess.

But the tender should not be the only game in town. If the government receives poor bids for the NBN, it can and should reject them all. There are alternatives that would fulfill on Labor's election promise and maybe, in these troubled economic times, be a much better deal for the country.

Now I have been skeptic as to whether the proposed fibre to the node network covering 98 percent of the country with 12Mbps or greater download speeds is worth the government dollars. In my mind, it is a proposal stuck in the middle. It commits us to mediocrity (12Mbps will barely keep us at the average in the OECD and the price to consumers will still be high) and does not address the main economic benefit of government involvement: securing a competitive telecommunications (not just broadband) industry.

So let's think big. What if the government rejected all bids as inadequate and embarked on building its own NBN? And not just one with mid-range bandwidth but instead a 'world best' target for a change: 100Mbps or even 1Gbps speeds. This would likely require fibre to the home in most places and, in others, some serious mobile technology. It would probably cost in excess of \$15 billion but these costs would be spread over a number of years. An NBN could not be built in a day.

That is a big price tag but the advantages are many-fold. First, the government would control the price to users and could target low income households more effectively as well as providing services that were open if used for education and health (saving costs elsewhere). Second, the government itself would become a strong telecommunications provider in competition with Telstra. That will benefit homes and businesses everywhere. Third, that competition would allow us to dismantle most telecommunications regulations in the country once the network was operating.

But it is fair to ask: why now? Well, the world has changed since Labor made its initial broadband promises. Specifically, the social cost of government expenditure has dropped considerably as the need for fiscal stimulus becomes apparent. And this stimulus should not just be throwing money at pensioners and consumers. It needs to be done in a way that creates jobs and builds productive capacity. So when telcos inevitably howl over this

proposed government investment in terms of lost jobs, the retort is straightforward: we will employ the people and the contractors. An army will move around the country laying cable and supporting the new broadband customers. Moreover, it will target key groups most vulnerable if private business should curtail its investing plans.

But wait, there's more. With the global economy slowing, broadband investment elsewhere will slow. That will drive down the costs of purchasing equipment and optic fibre. It will also give us an opportunity to catch-up. Australia can emerge from recession with a 21st Century telecommunications industry, well-placed to take on the world. If we complement this with investments in capacity over the oceans, we can open up opportunities for video conferencing (saving on airplane emissions) and even a cloud computing facility located in cooler places such as Tasmania or perhaps, with cooperation, New Zealand.

By moving to Plan B, the government also has the opportunity to optimise its plans. While one possibility would be for it to have a state-owned corporation do the entire job, in reality, there are other ways to get a network built. For instance, the government could build or lease the backbone from existing providers. It could then use tax credits to encourage localised initiatives to build fibre or other high-speed options in the last mile. Last week, Google's Derek Slater and Columbia University's Tim Wu proposed just that. Their 'homes with tails' approach reconceptualises who owns the network. It need not be a provider but it can be users themselves. Consortia or local governments could provide the means by which neighbourhoods invested in fibre networks and then contracted out their maintenance and management. It would become a home owner's asset in much the same way a new pool or a nice garden is. Consumers would recoup their investments in saved access fees as well as increased property prices.

For Slater and Wu, a real constraint would be how these local networks connected to the broader networks. But with a government-owned network, establishing Open Points of Presence could be done at the stroke of a legislative pen rather than through the uncertainty of years of negotiated regulation that would otherwise be required.

If broadband is of critical national importance as the government claims it is, the time for half-measures is over. A bold plan to leapfrog the competition and place Australia at the technological leading edge is both appropriate and timely given our macroeconomic circumstances. Fussing around as private enterprise tries to gain the best deal for their shareholders is wasting time and energy. Let it go Minister Conroy and move to a plan B that doesn't just meet but exceeds your election promises.

Joshua Gans is a professor of economics at Melbourne Business School. His extensive writings on broadband can be found at economics.com.au.