Policy Choices in Project NBN

By Harrison Young[[1]](#footnote-1)

Thank you to CEDA for inviting me to speak. The economic development of Australia is NBN Co’s *raison d’être.* I’m very happy to be here.

As you may have noticed, NBN Co gets a lot of mention in the media. Many people have opinions about the project. This is good. We are spending a lot of the public’s money. There *ought* to be scrutiny of our plans and performance.

What I’d like to do today – and this feels like the right audience for it – is to sharpen that scrutiny by clarifying some of the policy choices that have to be made.

Please note that by “choices” I mean options, not conclusions. Policy conclusions are matters for Government. Our job at NBN Co is to implement policy, as laid out for us by the Government of the day. But from our position at the mine face we confront interdependencies that are important for the public to understand.

 Project NBN has three interwoven elements or sets of issues. The first has to do with market structure, the second with infrastructure, the third with applications and benefits.

Much public discussion of the NBN focuses on infrastructure. This is not surprising. Fibre and satellites and poles and trenches are tangible. They are what most of the public’s money is being spent on. Infrastructure seems easy to talk about.

There is also increasing discussion of applications and benefits. My fellow panellists are primarily focused on that aspect of Project NBN. Again, this is not surprising. Futurology is fun. Apps are what make the NBN exciting. Apps will make the NBN increasingly valuable. We’ve all seen what the iPhone engendered. What will ubiquitous high-speed broadband spawn?

For the most part, the Government has outsourced applications. This isn’t a long-term solution. Or to be more precise, it isn’t a sufficient solution. Capturing the benefits of eHeath and eEducation will require NBN Co and the industry to engage with schools and hospitals, with state and Commonwealth government departments. Within the constraints of our wholesale mandate, we’re starting to do that, but I’ll leave that topic for another time.

What I want to talk about today is the other two sets of issues. The Government has elected to tackle market structure and infrastructure on a combined basis. It is entirely reasonable to question the policy choices the Government has made. That’s what democracy is about. But you need to keep the whole picture in view. If you want to make different infrastructure choices, you may need to accept different market structure outcomes.

The infrastructure issue is that too few Australians have access to reliable high-speed broadband. In terms of fixed broadband penetration at the end of last year, Australia ranked 21st out of 34 nations, as measured by the OECD. That doesn’t win any medals.

The market structure issue is that Telstra is vertically integrated. It is both the dominant supplier of wholesale services to smaller retail providers and also their largest retail competitor. It has been able to use its position in one market to give itself an advantage in an adjacent market.

The fact that Telstra has monopoly-like dominance at the wholesale level is not the issue. Or to be precise, it is not the issue Project NBN is addressing.

Telstra’s fixed-line copper network is a *natural* monopoly. A natural monopoly exists when one supplier can serve the entire market at a lower total cost than two or more suppliers can. Having multiple suppliers of natural monopoly services is socially wasteful. They make inefficient use of an economy’s resources.

This is why you don’t build two bridges next to each other, expecting that competition will force them to charge lower tolls. With equivalent costs and only a portion of total traffic, each of them will need to charge higher tolls than a single bridge-owner would require.

The problem with monopolies of all kinds is that, unless they are properly supervised, they can use their market power to charge prices that have little relation to their costs and earn “monopoly rents.” That’s why we regulate them. Telstra is regulated by the ACCC. NBN Co is regulated by the ACCC. The problem with Telstra is not that it is a regulated monopoly supplier of wholesale services but that it has been able to behave like a monopolist in the provision of retail services, which is not a natural monopoly.

There were several approaches Government might have adopted to address the problem of Telstra’s vertical integration and retail dominance. It did in fact pass legislation that allowed customers to object to Telstra’s behaviour, but that didn’t work. The so-called “negotiate and arbitrate” model for Telstra’s wholesale customers took far too long to deliver relief. This is a very complicated subject, to which I cannot do justice if you want to have lunch.

The Government might have required Telstra to split itself into two companies. There were several ways this might have been accomplished, but I won’t try to describe them.

In the event, what the Government has chosen to do is (1) create NBN Co, (2) instruct it to build a national broadband network to which all retail providers would have access on a non-discriminatory basis, (3) prohibit NBN Co from competing at the retail level, and (4) permit NBN Co to negotiate an agreement whereby Telstra is paid to disconnect its copper network and cease delivery of retail voice and broadband services over its copper and HFC networks.

Now, some might suggest that spending $44 billion dollars on a national broadband network is an expensive way to address a problem that further regulatory reform might have solved. But to the extent you accept that Australia *needs* a high-speed broadband network, and that private sector capital would not be available to undertake a project of this scale and character, then taking Telstra out of a large part of its wholesale business by replacing its aging copper network with fibre is an elegant solution.

Not everyone agrees that Australia needs a national broadband network quite as wonderful as the one we are constructing.

I might pause here to remind those of you who don’t follow Project NBN closely that the Government instructed us to build a fibre to the premise network to achieve speeds up to 100 megabits per second on fibre, with target coverage of 93% of premises and a minimum of 90%. The remaining premises are to get fixed wireless or satellite coverage with speeds up to 12 megabits per second. Our task has been to find the least-cost engineering solution for that brief.

Our deal with Telstra includes long-term lease or purchase of their pits, pipes and conduits to run our fibre through. We concluded that this would be more cost-efficient than digging our own trenches. We didn’t buy Telstra’s copper wires because our instructions were to use fibre.

There has been a lively debate, here and abroad, about the relative merits of fibre to the premise and fibre to the node. It has been suggested that running fibre strands to every house is unnecessary – that fibre-to-the-node would be a lot cheaper, and importantly “good enough.” This would mean terminating the fibre in a cabinet out on the nature strip, and using the existing Telstra copper from each cabinet to some number of homes.

That’s not a debate I want to enter. The point I want to make is that if you retain Telstra infrastructure as part of the national broadband network, even just the last bit, you will not have accomplished the separation of wholesale from retail that was a major objective of Project NBN.

You might address that issue by having NBN Co buy Telstra’s copper, or lease it, or whatever. You might find that negotiating such an arrangement slowed the project down more than you were willing to accept. You might find you were still tangled up in Telstra’s legacy IT, which could only be navigated with Telstra’s help, turning code into bottleneck infrastructure and giving Telstra ineradicable advantages. When you set the engineers to work on the subject, you might discover both problems and solutions you hadn’t imagined. I’m just recommending you bear in mind that an engineering solution does not automatically provide a market structure solution.

As I said earlier, there are always trade-offs to be made. Some of them live inside the engineering task, while some live in the realm of policy. And from time to time, they will change their spots. For example, the prospective cost savings of fibre to the node depend on what time frame you look at. Maintaining the copper that connects node to premise is expensive. Coping with legacy IT is expensive. The total system cost of fibre to the node is higher than its front-end cost. The same is true of fibre to the premise, but less so. The apparent cost advantage of fibre to the node decreases as you lengthen the time frame you look at. In the long run, as Keynes famously said, we are all dead. Estimating costs is an engineering problem. Deciding on the relevant time frame is a policy question.

Another suggestion has been that we *not* overbuild the HFC networks Telstra and Optus laid down twenty years ago. Scrapping those networks, it is argued, would be socially wasteful. Those networks could and therefore should be modified to provide “good-enough” broadband service to the 800 thousand households they already reach. New infrastructure would serve the balance of the nation’s premises.

Again there would be the question of who should own the piece of infrastructure we were trying not to waste. But for the moment let’s assume NBN Co did *not* buy or lease the HFC cable. That would affect market structure.

When Telstra and Optus installed their HFC networks, they went after the most attractive geographies, concentrating on wealthy suburbs and skipping areas where construction costs would be high. So if you create an NBN Co that *doesn’t* serve the homes and neighbourhoods served with HFC, you will have a less profitable NBN Co.

Because NBN Co is mandated to provide its wholesale services at a nationally uniform price, it will be subsidizing exactly those end-users that the HFC networks avoided. And if it doesn’t have access to the profitable customers the HFC networks already serve, it will find it harder to provide those subsidies.

I haven’t done the math. But this is an issue any Government would have to wrestle with if it elected to leave the HFC networks alone.

So what happens if you decide to make NBN Co the owner of those HFC networks and instruct it not to overbuild them? Depending on technical issues I am not competent to discuss, you could have the ironic situation that the wealthiest suburbs have the lowest-quality broadband in the country.

This brings us to the interesting issue of “cherry-picking.” If the richest people in the country have broadband that is only “good enough,” someone – Telstra, Optus, a new entrant? – someone is likely to offer those households a “superior” service, overbuilding the now NBN Co-owned HFC footprint with fibre, again sucking profits out of NBN Co, and undermining NBN Co’s ability to offer uniform national wholesale prices.

“Cherry-picking” is already an issue under existing plans. In providing wholesale service at a nationally uniform price, NBN Co is indirectly subsidizing hard-to-serve end-users at the expense of the most attractive end-users. Existing Government policy and telecoms law are designed to make it difficult for a cherry-picking competitor to underprice NBN Co in serving those most attractive end-users. Policy and law require a level playing field.

If the national broadband network – even if entirely owned and operated by NBN Co – is a patchwork of fibre-to-the-premise, fibre-to-the-node and upgraded HFC, with different end-users getting different levels of service, avoiding cherry-picking *could* become much harder. This in turn could drive NBN Co to pricing its services with more reference to the cost to serve particular geographies. That would represent a major policy change which could make it impossible to serve the most expensive geographies on a price-equivalent basis without making the subsidies explicit and transparent.

But to summarize the point, incorporating the existing HFC networks into the national broadband network is not just a question of engineering feasibility.

The final issue I want to touch on has less to do with infrastructure choices, but it deserves discussion: what to do with NBN Co’s profits.

What if take-up and usage of the broadband network are far greater than we expect? Because NBN Co’s fibre to the premise infrastructure can handle increased volume with little increase in costs, NBN Co’s profits would rise. We are regulated by the ACCC, of course, so there would be a ceiling. Monopoly rents won’t be tolerated. But within a range of acceptable regulated outcomes, and for a while, we might earn more than we planned.

As a Government Business Enterprise, we’d have three choices: reinvest more in the business, pay bigger dividends or lower our prices.

Reinvesting in the business has natural attraction for all companies. They’re proud of what they’ve achieved. They want to do more. Historically, government-owned enterprises around the world have had a particular tendency to hang onto their cash, assigning a higher priority to excellence than to efficiency, redefining their mission to include adjacent activities, arguing that investment spending is really a form of dividend because the entire population will benefit from the service enhancements achieved – implicitly asserting that they know best what the public should do with its money.

NBN Co’s enabling legislation requires us to stick to our knitting. And the rollout task at hand is a sufficient challenge. We’re just doing what we’ve been instructed to do, in accordance with a Corporate Plan the company has submitted to the Government and which the Government has made public.

But the *issue* is lurking in the weeds. It is there in the definition of “good enough.” As the interlinked markets for content and carriage evolve, does NBN Co’s mission – and the way it accomplishes it – also need to evolve?

The answer will involve engineering issues. NBN Co’s technical expertise will be relevant. The answer will involve business judgments, which is why a corporation with a board of directors was created to build and operate the NBN. But the answer will also involve policy issues, which are the province of Government. One of the responsibilities of NBN Co’s Board will be to be clear about these differences.

So no pet projects. No covert mission creep.

Paying bigger dividends – to return to the high-class problem of profitability – returning cash to our owner the Commonwealth would deliver any “surplus” profits to taxpayers as a whole. And it allows the Government of the day to think afresh about priorities. The Treasury would like that, same as investors in private sector companies do.

Lowering our prices is another way to return capital – by giving it to taxpayers in their capacity as end-users of a ubiquitous broadband network. We have said that would be our preferred approach. That of course assumes that competition induces our direct customers, Telstra and the other retail service providers, to pass on the benefit of lower wholesale prices.

Project NBN makes the crucial assumption that there will be vigorous competition at the retail level, which will drive down prices and deliver value to end-users. But what if that doesn’t happen? I’ve asked that question of a lot of friends and colleagues. Most of them answer that of course there will be competition. Look how many retail service providers there are, they say. Telecom is a sexy industry, full of entrepreneurs. I tend to agree.

But economist friends have suggested to me that it is *impossible* to predict what will happen. Telstra has a very large market share. Its customers could prove loyal. It might for some years retain sufficient retail market dominance that it can behave like a classic monopolist, finding by trial and error the spot on the end-user demand curve where price and quantity yield the highest profit. In that scenario, lowering our prices will have little effect on what Australians pay for broadband. To the extent that’s how the market evolves, the better course for NBN Co could be to pay higher dividends.

 I raise these matters – some perhaps far-fetched – to try to set us thinking about the market structure issues and related policy choices the country will be wrestling with as Project NBN unfolds. It’s a debate we must continue to have.

Thank you for your attention.

1. Mr. Young is chairman of NBN Co. He spoke on 10 September 2010 in Sydney at an event organized by the Committee for Economic Development of Australia. [↑](#footnote-ref-1)