

# Inside Conroy's Implement

 insidestory.org.au/inside-conroys-implement/

5/17/2010

**3654 words**

[National Affairs](#)

[Jock Given](#)

16 May 2010

What does \$25 million worth of consultancy conclude about the national broadband network, asks *Jock Given*

Communications minister Stephen Conroy (left) listens to finance minister Lindsay Tanner during the launch of the National Broadband Network *Implementation Study* this month. *AAP Image/Alan Porritt*

FIBRE-TO-THE-HOME is supposed to let you do pretty much anything. Anything except look into it. Side-on is okay, but peering down a live optical fibre cable is like staring into a tiny, focused sun. A lot of light bores straight into your eyeball. Definitely not a good look.

Staring at fibre is what consultants McKinsey & Company and accountants KPMG have been doing for the last several months. The federal government paid them around \$25 million; broadband minister Stephen Conroy got a 534-page [Implementation Study](#). Value for money? That depends on what you were looking for.

In April last year, prime minister Kevin Rudd, finance minister Lindsay Tanner and Senator Conroy [announced](#) that the plan they took to the 2007 election for a fibre-to-the-node national broadband network, or NBN, was being superseded by a much more ambitious plan to take fibre all the way to 90 per cent of Australia's residential and business premises. It would take eight years and cost \$43 billion. Work would begin almost immediately in Tasmania, and there would be an eight to nine month *Implementation Study* "to determine the operating arrangements, detailed network design, ways to attract private investment... and ways to provide procurement opportunities for local businesses."

McKinsey and KPMG got the gig, and about a week ago Conroy [released](#) their work. "Study confirms NBN vision," his website headlined it. "The National Broadband Network is achievable, financially viable and will transform life and business in Australia." It was a nice, clear message, tight enough to tweet if you took out the full-stop, and a potent implement to wield against the NBN's critics.

A CYNIC would expect the government to have got exactly what it wanted for \$25 million. It didn't. McKinsey and KPMG skilfully crafted a study that sticks to some of the critical parameters specified by the government a year ago but modifies others in quite fundamental ways. It proposes fibre to a bigger proportion of premises but suggests an entry-level service much slower than the 100 Mbps promised. It has a lot to say about retail prices, where the government was silent. And the study says that although it can all be done for \$43 billion as promised, the private investors that were also promised will not go near it.

The government said it would connect 90 per cent of homes, schools and workplaces with speeds up to 100 Mbps via fibre and the other 10 per cent with 12 Mbps using wireless technologies, but explicitly made those estimates a matter for the *Implementation Study* to investigate. McKinsey and KPMG estimated costs in much more detail than the government's quick-and-dirty effort that came up with the \$43 billion a year ago. They claim to have analysed down to the level of every address in the country with a cost model using "fact-based... bottom-up... geo-spatial modelling" and "granular data."

Crucially, unlike the revenue estimates, these cost estimates haven't been seriously challenged by the many analysts who have scrutinised them in the week since the study's release. But what they really show is not what it costs to build an FTTP (fibre-to-the-premises) network, because there are different kinds of FTTP network and

different ways of building them. What they show is how much of a particular kind of FTTP network you can build for everyone who already gets ADSL and still have enough change out of \$43 billion to get the promised 12 Mbps to the rest. The new cost estimate is actually \$42.8 billion, a sure sign that the quick-and-dirty \$43 billion that started out on the back of an envelope a year ago became one of the policy bedrocks.

The study recommends that the kind of fibre network it prefers should be built to 93 per cent of the twelve million premises Australia will have in 2018 – up from 10.7 million today. This is 3 per cent more than the government promised. It acknowledges the political reality that the 92 per cent of premises that can already receive fixed-line broadband over the copper network via ADSL will have to get fixed-line broadband under the NBN. A [fixed-wireless](#) network should serve a further 4 per cent and specially designed satellites the remaining 3 per cent, though these satellites should be engineered to provide services across all areas not reached by fibre.

Many factors influence the estimated cost, but the most important are the “topologies” recommended for the network. The kind of network McKinsey and KPMG prefer uses a so-called “home run” topology in which dedicated fibre lines run all the way from exchanges to homes and business premises, rather than sharing fibre from exchanges to kerb-side splitters serving thirty-two premises, with dedicated fibre lines from there to individual premises. “Home run” topology is more expensive and might use more electricity, but McKinsey/KPMG think it will eventually allow stronger competition among retail service providers. They think this “home run” topology could be used for half of all premises without blowing the original cost estimate, but suggest further investigation. There’s a strong hint that they think it would be a good idea to spend what it takes to get “home run” to the whole 93 per cent.

Costs are also heavily influenced by whether the fibre is strung overhead from poles or buried underground. The study proposes that 55 per cent of premises are served by aerial deployment, but notes “significant uncertainty” about this figure. This arises because local communities might resist it, as they did when Optus and Telstra built new cable networks in the mid 1990s. To overcome this, the study recommends easing the rules painfully renegotiated at that time to allow NBN facilities to be regarded as “low impact,” and thus harder for local councils to resist. The uncertainty also arises because more detailed assessments are still needed to determine the exact proportion of existing poles that can actually do the fibre job.

Cooperation with the power utilities that own pole and duct networks of their own could be very productive, as is occurring in Tasmania, but the study notes that this has not been successfully managed anywhere in the world. For example, there has been talk about coordinating the fibre network construction with the installation of “smart” electricity meters, but the mainland power companies are moving well ahead of the NBN timetable.

When the FTTP network was announced, much was made of the proposed headline 100 Mbps download speed. McKinsey and KPMG don’t believe this makes sense as a minimum speed for all users in the near-term. Internet service providers have struggled to “upsell” advanced broadband services purely on the basis of higher speed, especially because of the wide variations between speeds advertised and those actually experienced in typical use. Customers are reluctant to pay premiums for higher speeds because they are not sure they’ll get them in practice.

The study says: “Demand for top speeds on the network is likely to evolve slowly over time. Although trends indicate demand for 100 Mbps and higher will be inevitable, it will take some time for a range of services that consume this level of bandwidth to become widespread.” The initial NBN experience for a majority of end users will be defined by an “entry-level” broadband service. It recommends one “in the range of 20 Mbps” for downloads. It also thinks “government can afford to be less prescriptive about minimum upload specifications.”

Even for these slower proposed speeds, “The actual broadband speeds experienced by end users will be impacted by bottlenecks upstream in the network, such as limited capacity in international transport links and the speed of content-hosting servers. These bottlenecks are outside the control of NBN Co, but will be resolved by market forces over time.”

For the 7 per cent of premises beyond the reach of fibre, the study has bad news. The promised 12 Mbps cannot realistically be an *average* download speed, merely a *peak* download speed experienced by individual users during periods of high demand. If there is more than one individual user in an area at a time, each will only get a

fraction of the peak capacity of the network there. It is just too expensive to promise anything better though the study stresses it should still be a lot better than present services.

The government's announcement last year was vague about retail prices. It said, "Every person and business in Australia, no matter where they are located, will have access to affordable, fast broadband at their fingertips." Because NBN Co will only provide wholesale services it is hard to be too prescriptive about the prices retail providers will charge, but the study deals with them because they are so critical to consumer take-up. Clearly, the authors do not subscribe to the "build it and they will come" philosophy.

Sceptical about the willingness of consumers to pay premiums for higher speeds before the widespread emergence of applications to take advantage of this capacity, the study recommends that NBN Co "price for affordability and take-up in the near term." While convinced there is "strong demand for superfast broadband services which will increase as an applications eco-system emerges to take advantage of the high available bandwidth per user," it wants the initial deployment of retail services using the NBN to deliver improvements that are impressive enough for users to notice a "step-change" in their online experience, without a step-change in the amounts they pay.

Even pricing for affordability, McKinsey and KPMG think incentives may be required to encourage users to switch to fibre services, especially because of the costs involved in acquiring new equipment in homes that will work with it, such as new wiring. It proposes a "migration payment" of \$300 per premises – a total of \$3.3 billion for all premises served by fibre by 2018.

With cheap wholesale prices and this incentive payment, the study suggests NBN Co can achieve an annual take-up rate of 6–12 per cent of premises passed by fibre. This is similar to rates in Japan, South Korea and the United States over the last four years, although the study notes the bigger challenge in Australia because of the near ubiquity of the proposed network. By not giving priority to the most commercially attractive areas – good politics, bad economics – it will be harder to match take-up rates achieved by overseas companies that took this approach.

THIS MODELLING of costs and revenues leads to the big bottom line: is the NBN "viable"? The study calculates internal rates of return based on various scenarios of the costs and revenues. On the cost side, it considers the impact of outcomes at the low or high ends of the plausible range as well as an Opera House "cost blowout" scenario. It also factors in potential savings from sharing some of the infrastructure with, for example, Telstra. On the revenue side, it considers different wholesale prices for a basic service (\$30 or \$35 a month) and low, medium and high take-up rates for all forms of fixed line broadband. These range from 70 per cent of premises to 90 per cent. The mid-range, 80 per cent, doesn't seem hard when 72 per cent of households already have internet connections, until you remember that only 78 per cent currently have a computer.

Rates of return come out at 3.6 per cent for low demand, low price, a cost blowout and no sharing of ducts and poles, or 8.3 per cent if it all goes swimmingly. McKinsey and KPMG think 6–7 per cent is a reasonable estimate. When the long-term bond rate is around 6 per cent, that's enough for the government to declare it "viable" – though it's plainly not for the private sector, from which "significant investment" was anticipated when the policy was announced a year ago. McKinsey and KPMG deliver this message unflinchingly, though they are only stating what most observers knew from the outset. Despite a lot of talk about spirited investors taking a stake in the country's broadband future and particular companies "vending in" certain assets in exchange for equity in NBN Co, this is not even close to a commercial proposition given the level of risk.

As anyone who walks past a bank knows, you can get 7.05 per cent today for leaving \$5000 with Westpac for five years or the Bank of Queensland for three. And you wouldn't have to build a broadband network. If you rocked up with \$43 billion, or even the peak proposed drawdown of \$26 billion, you could probably wangle an extra few basis points.

It is these estimates of take-up and revenue, especially in the face of surging wireless broadband subscriptions, plus the methodology for estimating the rate of return and the appropriate rate to compare it with, that have produced some scathing responses. The benchmark rate of return needs to take into account a project's risk and

what else could be done with the money. A persistent critic of the NBN, economist Henry Ergas, pointed out that the government's own *Department of Finance Handbook of Cost Benefit Appraisal* says "the government's borrowing rate does not reflect the true opportunity cost of the use of capital funds." You could tweet that too, but it struggles to compete with "Financially Viable."

Analysts have particularly focused on the study's assumptions about what Telstra will do. The costs of the network have been estimated initially as if Telstra plays no part. If a deal is done with NBN Co for sharing some of Telstra's assets like poles and ducts, the costs could come down by \$5 billion. But the take-up and revenue assumptions, especially under the "high" scenario, seem to assume already that there is a deal under which Telstra migrates its fixed-line traffic across to the FTTP NBN.

If there is no deal between Telstra and NBN Co, and Telstra chooses to fight to keep its traffic on its own copper and cable TV networks, 7.05 per cent at Westpac or the Bank of Queensland could be looking very much more attractive places for the taxpayers' billions than NBN Co. The long-term worry is that a government responsible for an investment of this scale will be tempted to shape the activities of its wholly owned NBN Co and the regulation of the industry to shore up its returns. It could penalise companies that tried to offer fixed-line competition, allow the monopoly-like NBN to ratchet up its prices (the study considers both these), allow NBN Co to provide retail services as well as wholesale (legislation introduced into parliament gives the minister the power to approve this) or, perhaps particularly troublingly, hasten slowly on matters that would stimulate mobile broadband, and so take or keep customers away from the fixed-line NBN access network.

WHAT McKinsey and KPMG have delivered is the most substantial public analysis of an Australian communications infrastructure project since the domestic satellite system in the 1980s. This is a major benefit, though not necessarily a good omen. AUSSAT racked up \$800 million in debt within a few years. Voluminous public documentation doesn't always lead to great decisions.

Indeed, in Australian communications, the size of the study is generally indirectly proportional to its influence. The bulky Davidson Inquiry recommending competition in telecommunications and the multi-volume Broadcasting Tribunal inquiry recommending the introduction of cable TV, both in the early 1980s, achieved close to zero. The Productivity Commission's year-long inquiry into broadcasting in 2000 was largely ignored. But Kim Beazley's few-page statement about telecommunications competition in 1990 blew the industry apart. By this standard, the two-and-a-half-page media release announcing the NBN in April 2009 was bound to change the world.

The McKinsey/KPMG study is testimony to the sea-change in telecommunications policy in the last two and a half years. For twenty years, both sides of politics have been getting the government out of the telecommunications business, first by allowing private competitors to take on the state-owned monopoly that ran the country's telecoms for ninety years, then selling down the state's ownership of it. When new mobile and fixed-line networks were built in the 1990s and 2000s, communications ministers didn't pour over technology choices, costs, revenues, capital allocation and geographic priorities the way Postmasters-General used to do. Parliament had decided that governments made lousy decisions about those kinds of things.

At least, they weren't supposed to be pouring over these things the way Postmasters-General used to do. The truth was they still did quite a lot of it. The Coalition government crawled all over Telstra's timetable for shutting down its analogue mobile phone network and applied immense pressure on its plans to build and later close a CDMA network. In his book *Wired Brown Land?*, Paul Fletcher, chief of staff to long-term Howard government communications minister Richard Alston and now the Liberal member for Bradfield on Sydney's north shore, says Ziggy Switkowski was not even on the shortlist of candidates for CEO until Alston insisted he be there. This was at a time when Howard and Alston were pushing their reluctant backbench to support privatisation. The government, they said, had no business controlling a telecommunications company.

But out in the new marketplace, the cable TV and eventually broadband network built in the mid 1990s by the new wholly private telco, Optus, didn't work very well. The still-public Telstra proved more nimble and ruthless than some expected, building a similar network down many of the same streets. Both companies had to write off billions of dollars. It seemed telcos in commercial markets, even privately owned ones, could make lousy

decisions too. Optus's subsequent caution about investment in fixed-line networks and the curiously widespread, renewed enthusiasm for monopoly is the deep legacy of that time.

The government's response has been to get back to controlling a telecommunications company. It is not the vertically integrated Telstra, it's the wholesale-only NBN Co. McKinsey/KPMG's *Implementation Study* contains a set of recommendations that are not yet government policy, but it tells us a great deal about this new, old world.

We have a good idea – the best yet – about how much it might cost. We have lots of data and discussion about what it might earn in revenue. We have an argument about “viability,” but this is really an argument about whether the now fairly well-articulated financial returns that can be expected from the project are justified by the economic and social benefits that might not be captured by the financial modelling.

This is where faith and politics take over. For some, the scale of the benefits that will come from universal access to superfast fixed-line broadband are immense. Many studies attest to the productivity gains or savings across industry sectors like electricity, education, health and transport that the authors believe will flow, or show how small such gains or savings would need to be, relative to the size of the sectors, to justify the cost of building all-fibre networks. If the benefits can be secured through a process that can be reasonably expected to earn 6–7 per cent on funds borrowed at 6 per cent, you should leap at it.

For others, the benefits of superfast broadband are not so abstruse that household and especially business customers can't make up their own minds whether they need it. This means their preparedness to buy it, reflected in the prices they'll pay and hence the financial modelling, offers a pretty good proxy for the total economic and social benefits that will flow. A carefully-worked through estimate of only 6–7 per cent suggests the faith could be a bit overblown, especially given some optimistic assumptions.

When an interdepartmental committee examined the AUSSAT proposal over thirty years ago there was one dissenter from the recommendation to proceed. The representative from the Department of Finance pointed out that the numbers didn't really add up. There were other ways of getting more or less the same benefits more cheaply. Mesmerised by the prospect of transformative communications infrastructure, all the other officials signed off on what became a financial debacle for the government.

But this financial debacle became the trigger for the complete overhaul of the structure of the telecommunications industry in Australia, finally breaking Telecom Australia's monopoly. Many think that was a good thing. One aspect of this new structure, however, the vertical and horizontal integration of Telecom's successor Telstra, became the butt of blame for failing to deliver a truly competitive telecommunications industry.

It is hard to predict these kinds of twists in the outcomes from major telecommunications projects and policy shifts. Given their history, however, it is essential that we take a long, hard look down the line at new ones.

McKinsey and KPMG don't say Do It or Don't Do It – that's the government's decision and it was elected, in part, to fix broadband in Australia. They don't revisit all the debates about the productivity gains and savings that might result – they weren't asked to.

They just take that long, hard stare down the line at what will be required to deliver on the ambition to lead the world in building a state-owned, open access fibre network across a big, wide country in eight years.

It is not easy on the eyeball. Even at \$25 million, Senator Conroy's Implement seems like money well spent. •