COMMONWEALTH OF AUSTRALIA

Official Committee Hansard

SENATE

SELECT COMMITTEE ON THE NATIONAL BROADBAND NETWORK

Reference: Implications of the proposed National Broadband Network

MONDAY, 20 JULY 2009

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SENATE SELECT COMMITTEE ON

THE NATIONAL BROADBAND NETWORK

Monday, 20 July 2009

Members: Senator Fisher *(Chair)*, Senator Nash *(Deputy Chair)*, Senators Birmingham, Ludlam, Lundy, Ian Macdonald and Sterle

Senators in attendance: Senators Fisher, Lundy, Minchin and Ian Macdonald

Participating members: Senators Abetz, Adams, Back, Barnett, Bilyk, Mark Bishop, Boswell, Boyce, Brandis, Carol Brown, Bushby, Cameron, Cash, Colbeck, Jacinta Collins, Coonan, Cormann, Crossin, Eggleston, Farrell, Feeney, Ferguson, Fielding, Fierravanti-Wells, Fifield, Forshaw, Furner, Heffernan, Humphries, Hurley, Hutchins, Johnston, Joyce, Kroger, McEwen, McGauran, McLucas, Marshall, Mason, Minchin, Moore, O'Brien, Parry, Payne, Polley, Pratt, Ronaldson, Ryan, Scullion, Stephens, Troeth, Trood, Williams, Wortley and Xenophon

Terms of reference for the inquiry:

1. To inquire into and report on:
    a. the Government's decision to establish a company to build and operate a National Broadband Network (NBN) to:
        i. connect 90 per cent of all Australian homes, schools and workplaces with optical fibre to the premise (FTTP) to enable broadband services with speeds of 100 megabits per second;
        ii. connect all other premises in Australia with next generation wireless and satellite technologies to deliver broadband speeds of 12 megabits per second or more;
        iii. directly support up to 25,000 local jobs every year, on average, over the eight year life of the project.
    b. the implications of the NBN for consumers and taxpayers in terms of:
        i. service availability, choice and costs,
        ii. competition in telecommunications and broadband services, and
        iii. likely consequences for national productivity, investment, economic growth, cost of living and social capital.
2. The committee's investigation should include, but not be limited to:
    a. any economic and cost/benefit analysis underpinning the NBN;
    b. the ownership, governance and operating arrangements of the NBN company and any NBN related entities;
    c. any use of bonds to fund the NBN;
    d. any regulations or legislation pertaining to the NBN;
    e. the availability, price, level of innovation and service characteristics of broadband products presently available, the extent to which those services are delivered by established and emerging providers, and the prospects for future improvements in broadband infrastructure and services (including through private investment);
    f. the effects of the NBN on the availability, price, choice, level of innovation and service characteristics of broadband products in metropolitan, outer-metropolitan, semi-rural and rural and regional areas and towns;
    g. the extent of demand for currently available broadband services, the factors influencing consumer choice for broadband products and the effect on demand if the Government's FTTP proposal proceeds;
    h. any technical, economic, commercial, regulatory, social or other barriers that may impede attaining the Government's stated goal for broadband availability and performance in the specified timeframe;
    i. the appropriate public policy goals for communications in Australia and the nature of any necessary regulatory settings to continue to develop competitive market conditions, improved services, lower prices and innovation;
    j. the role of government and its relationship with the private sector and existing private investment in the telecommunications sector;
    k. the effect of the NBN on the delivery of Universal Service Obligations services;

l. whether, and if so to what extent, the former Government's OPEL initiative would have assisted making higher speeds and more affordable broadband services available.

3. In carrying out this inquiry, the committee will:

   a. expressly seek the input of the telecommunications industry, industry analysts, consumer advocates, broadband users and service providers;

   b. request formal submissions that directly respond to the terms of reference from the Australian Competition and Consumer Commission, the Productivity Commission, Infrastructure Australia, the Department of the Treasury, the Department of Finance and Deregulation, and the Department of Infrastructure, Transport, Regional Development and Local Government;

   c. invite contributions from organisations and individuals with expertise in:

      i. public policy formulation and evaluation,

      ii. technical considerations including network architecture, interconnection and emerging technology,

      iii. regulatory framework, open access, competition and pricing practice,

      iv. private sector telecommunications retail and wholesale business including business case analysis and price and demand sensitivities,

      v. contemporary broadband investment, law and finance,

      vi. network operation, technical options and functionality of the 'last mile' link to premises, and

      vii. relevant and comparative international experiences and insights applicable to the Australian context;

   d. advertise for submissions from members of the public and to the fullest extent possible, conduct hearings and receive evidence in a manner that is open and transparent to the public; and

   e. recognise the Government's NBN proposal represents a significant public sector intervention into an increasingly important area of private sector activity and that the market is seeking openness, certainty and transparency in the public policy deliberations.

WITNESSES

Committee met at 9.08 am

MOORE, Mr Malcolm Ian, Private capacity

CHAIR—Welcome to the recommencement of our inquiry after the government's recent announcement about moving on from NBN round 1 to the current proposals. The proceedings of the committee are public. If at any stage you wish to provide your evidence in private, you are able to request to do so and the committee can consider your request. The proceedings and your evidence are protected by parliamentary privilege and it is an offence for a third person to attempt to interfere in any way with evidence that would otherwise by given by a witness and it can indeed also be found to be a contempt of the Senate. You have provided us with a submission. Do you wish to make any amendments to the submission?

Mr Moore—That one can be as it stands. I have a secondary simple one that I have on overheads, which I have provided here.

CHAIR—That is by way of supplementary material and not as a correction to your existing submission?

Mr Moore—There are no corrections to it as far as I can recall.

CHAIR—Would you like to make an opening statement.

Mr Moore—I have well over 35 years expertise in the telecoms industry in the technical, engineering and management areas. I have been a technician in virtually every arrangement, an engineer in virtually every arrangement and I have been a manager in several areas. I have physically worked in virtually every technology and every business unit or area in the telecoms industry. My experience extends well past project supervision, occupational health and safety, project management, bids, tenders, analysis, product management, senior management, business development and I have also worked with technical and fundamental analysis of the stock market. I am intensely interested in the wellbeing of Australia's broadband future. Over the past decade I have produced several submissions to provide answers to questions that would be asked if they had the right frame of reference.

When I was a young school kid my father, who was a lawyer, gave me some very sound advice; it went along these lines: if you are trying to solve a problem and you find the answer are very complex and very difficult then you are using the wrong frame of reference. Step back and change your frame of reference with the right frame of reference and the problem will easily be resolved. Over the years I have found this advice to be absolutely invaluable to me. This is part of the reason for this submission.

In March 2008 I made a submission to the expert panel on broadband. That submission showed that the Telstra and Optus HFC footprints cover almost all of the major metro areas, which is about 65 per cent of the total Australian population. You may not be aware that Telstra's HFC technology was re-engineered in 2006 and 2007—I was actually the project supervisor in Sydney on that one—making it capable of servicing more than 4.5 million premises, or about 60 per cent of the metro population, with broadband speeds greater than 20 megabits. This is where ADSL will not reach. That submission also explained why paired copper ADSL has a useful

reach of about 37 per cent of the metro CAN and a reach of about 13 per cent of the non-metro CAN. Optical fibre has a reach of about 60 kilometres and a bandwidth of about 1,000 times that of paired copper. This is a no-brainer for any real expert committee to resolve in one day, let alone months. The submission also explained how to implement some technology to virtually double the reach of paired copper ADSL in some areas.

The submission also proposed that the expert committee think inside out and define the inland coast backhaul system providing high-capacity diversity for more than 90 cities and towns. I will just do a quick show on this to show what I am talking about.

A PowerPoint presentation was then given—

Mr Moore—The first slide shows the little thing I gave before. The next slide shows what I am proposing as the inland backhaul—high capacity—and that would pick up an amazingly large amount of the inland. There is nothing from Darwin down to Cloncurry it sort of exits but it is not high enough capacity, and the rest does not exist at all. If you extend that slightly, you can put a whole grid on there. Most of the ones off the coast going in exist; the rest does not. I know the network like the back of my hand.

This backhaul would also provide the necessary backbone feeders for fibre to the premises and radio CAN technology in regional, rural and remote areas and provide major backhaul capacity towards the South Coast and East Asia through Darwin. This is the missing backhaul link to provide the backhaul infrastructure that regional and remote Australia desperately needs. Unfortunately, that submission to the expert panel is now somewhere in the archives of the DBCDE. I hope the select committee takes notice of the contents of this submission to economically restructure the Australian telecoms industry before rolling out the NBN on a large scale.

Having worked in almost every area in the telecoms industry, I now believe that I have the wisdom to understand Australia's main telecom businesses are a combination of two diametrically opposing imperatives, and that is the basis of this submission. One of these imperatives is that which the wholesale infrastructure provider is focused on: maximising services and maximising service standards. The second diametric business imperative is that which the retail reseller is focused on: maximising profits for its shareholders and minimising overhead costs.

These imperatives diametrically oppose each other. This cannot work; it does not function. These two imperatives make Telstra and others highly dysfunctional, and the slowly dying share price over several years reflects that problem. This is bad for Telstra, bad for the ASX, bad for the financial industry, bad for the government and bad for almost all Australians. There has to be microeconomic reform in Australia's telecoms industry before the NBN program is rolled out.

In 1956, two economists, Australian-American Kelvin Lancaster and Canadian Richard Lipsey, came up with the theory of the second best, which in simple English states that, when businesses work in synergy, they will always give the most efficient outcome for the economy. Putting this in a more brutal form, the privatised, competitive regime is clearly a very poor second best to any synergetic infrastructure regime. The Cold War was in its throes when this

theory came out, and economics lecturers found this theory very difficult—I will put that very nicely—in that political climate. So the theory has sat quietly for several decades.

Over the past 30 years, the Australian telecoms industry has become riddled with massive legal complexities, swathes of laws and regulations to restrict competition involving infrastructure, with the intention to level the playing field. It is obvious to me that the current competitive regime frame of reference is wrong, so I changed my frame of reference and queried the need for competition where infrastructure is involved.

Professor Sharon Beder from the University of Wollongong has recently published several books on historical business economics clearly showing the lengths that USA based capitalists have gone to systematically pushing their brand of laissez-faire competitive regime on the rest of the developed world over a century, primarily to benefit themselves. It has to be realised that a competitive regime is inherently very inefficient, or second best, compared to any cooperative arrangement, like an infrastructure regime. And, by the way, departments in governments are infrastructure regimes. They are not fighting against each other to do it better; they are doing it by themselves. Countries like Sweden, which is socialist, have many very efficient government businesses which are infrastructure regimes, proving that the theory of the second best is highly credible. It is unliked by wealthy capitalists, and it is obvious why.

Governments like to support the competitive regime philosophy because there are huge money velocities involved in infrastructure businesses, like the $42 billion for the NBN. Competing businesses with multiple managers and multiple boards are very inefficient and consume considerable revenues in the fight against each other for market dominance so they can maximise profits through monopoly control. The prime focus of an infrastructure business is to maximise services through their critical mass and decrease end-user costs, because the profit comes from the other areas making a benefit, and they put the money back to the government. This should fit very comfortably with the competitive regime because this offers to maximise the retail profits, if they use the structure I am putting forward.

We have all witnessed over the last few years the results of the unregulated, uncompetitive business, and this is the ugly end of the competitive regime. The general population in the economy always comes off second best, supporting the premise that the competitive regime operating major infrastructure is a seriously flawed economic strategy. Since the privatisation of telcos in the late 1970s, Australia has now got multi-duplicated infrastructures that are competitively pitted against one another, and this has proven to be highly inefficient. Even though a plethora of new products and services have come in, thanks basically to the digital era, end-user prices have not come down as projected and we do not have to look very far to identify the high level of complaints and general dissatisfaction with the high end-user costs especially for broadband services.

Other eminent people have pressed for change also, and have been doing so for quite some time. In 2004 Dr Peter Gerrand from the Telecommunications Society of Australia, working at Melbourne university, in his paper *Revisiting the structural separation of Telstra* showed how Telstra could be structurally separated at the backhaul, and I generally agree with his strategy. But having worked in a large number of telecom facilities, I know that the backhaul and CAN infrastructure is a continuum, and I will just show you a piece on that.

Here is the typical structure showing how you would see the network connecting. You would go from one side of the bottom up through a local exchange, through the major ones and then come back. That is the basic structure, a very simplified version of how that goes. This is the stupidity of cutting the CAN off from the backhaul. No person who knows anything about telecoms would ever do that unless they are trying to kneecap the competitive other side, and that does not make sense because it does not help the society.

So I strongly favour moving all the network infrastructures including the CAN into one subgovernment infrastructure business focused on maximising the availability of service and maximising the service standards of telecom wholesale services everywhere. And I do not mean just coastal areas; I mean everywhere. My submission also supports the economic restructuring of the telecom industry so that private retail resellers can operate robust competitive businesses and be listed on the ASX.

I will go just one little step on this one here. If you go across the top of this little diagram here, it shows where the backhaul sits. You have got the CAN on either end and you have got your customer premises equipment on either end, effectively. If you take out the hybrid fibre, which is about two-thirds the way down the left, the HFC, you have got to have the routers and the optical fibre backhaul connected to it or it does not connect. So as for taking off the CAN at the end, the hybrid fibre, and whether we should separate that, only a person who is totally inept would think along those lines. It has to be structured so that you have a continuum.

This submission shows that using a different frame of reference removes competition from the infrastructures and positions competition at the retail resellers, and that is what I am putting up there. This removes the need for the Trade Practices Act to include heavy-handed regulation, removes the ACCC from managing a continuum of very complex rulings, removes the need for hundreds and probably thousands of lawyers to fight legal battles, and removes a huge load of service complaints from the TIO—problem solved.

Telstra is apparently internally separated but it has one board with diametrically opposing business initiatives—as I indicated at the front. No formal Telstra split will be successful if a single board remains at the top. So this means a second board or a committee needs to be created, and Telstra needs to have BigPond spun off as a totally privatised retail reselling business with its current board. BigPond will be highly successful because it is a very well-known brand name. It has a very large customer base; it would be totally focused on shareholder value, which they want; and it is reselling wholesale product as bundled retail services together with its online businesses and its pay TV business. If GM can restructure in 40 days, I cannot see why we cannot do this in under 30 days, really.

With BigPond retail spun off from Telstra, this gives Telstra Infrastructure Wholesale, TIW, a mandate to maximise profit and availability and maximise the service standards of telecoms wholesale services everywhere in Australia, not just on the coast. This is where the NBN fits in, this is where it should be, not as a competitive business. That would minimise the wholesale prices over time.

It is interesting to note that the Optus submission favours the structural split of Telstra. Optus has also offered to sell its hybrid fibre-coaxial infrastructure to the NBN. But you also need to have the backhaul that goes with it, or you will not be getting anything. I asked the question:

why do they want to sell the HFC anyway? Maybe it is not making money; I do not know. It leads to the consideration that Optus could spin off its entire telecommunications infrastructure to be consolidated with that of Telstra Infrastructure Wholesale. This would focus Optus retail on reselling wholesale telecoms products as retail services in robust competition with BigPond. That has to be good for the Australian economy, it has to be good for the ASX and it has to be good for Australian financial institutions. Other telecoms ISPs should follow suit. All these infrastructures could perhaps be merged into one synergistic, highly efficient telecommunications infrastructure, creating tremendous savings in Australia's capital expenditure. The productivity of this would be immense. We are looking at at least $20 billion being saved.

With regard to the inland east coast backhaul system that I mentioned in my submission to the expert committee, no competitive telecoms business would provide the backhaul. It does not matter which government you look at; neither of them would do it. That is because they use internal profit and loss accounting. That is the problem: accounting. They see it as commercially unviable. Even the USO incentive of about $150 million a year did not make a difference. This shows the immense flaws in the competitive regime strategy. Several DBCDE documents expressed the imperative for savings in rural and remote health and education. This is where a government commissioned telecoms infrastructure business would be using external profit and loss accounting procedures that would make this business a prime imperative. That is what the NBN is, is it not? External accounting is saying it should be there. It is a prime business case to connect broadband to as much of the inland population as possible. This is where I think that Senator Conroy has it wrong and the previous government had it wrong. They were looking for a competitive solution, when it should be an infrastructure solution.

It is high time that parliaments realised the gravity of Australia's very inefficient competitive infrastructure situation and understood that Australia cannot afford to continue promoting the competitive regime strategy with infrastructures. The competitive regime has its place in retail reselling, and this is where a competitive regime should be positioned. Look at Coles, Myer and Woolworths. That is what they are doing. With the spinning off of big Pond finalised, Telstra Infrastructure will be the ideal platform for NBN to be grafted on to. This will, as I said before, save Australia at least $20 billion in non-duplicated infrastructure. Thank you very much.

CHAIR—Thank you. Senator Lundy?

Senator LUNDY—Looking at the current graphic, I am curious as to whether you are promoting this kind of structural separation of Telstra, and potentially others, prior to the NBN being finalised, as part of a transition towards the NBN model, or whether you see your proposal sitting alongside a National Broadband Network infrastructure.

Mr Moore—Telstra basically already has a national broadband structure, so it would seem ludicrously stupid to go and build another one alongside it. It just does not make sense. Therefore I would propose that the structure be put in place before they roll out the NBN.

Senator LUNDY—I am just trying to grasp your key point. The way I interpret what you are saying is that you think there is enough infrastructure, including with the possibility of some additional backhaul investment, to achieve the aims of the NBN without going down the full path of the NBN.

Mr Moore—Yes, that is true. The big problem is that the copper CAN part of the network has been in place for 40 or 50 years and it is really due to come out. It is obvious that fibre to the premises is the solution—and radio in areas where fibre to the premises is unviable. It makes logical sense to me that the copper gets pulled out and replaced by optical fibre, and the backhaul has to be considerably increased in size. If you get outside of the metropolitan areas, really the backbones are thin. They were engineered to be capital city centric.

Senator LUNDY—A hub and spoke model. In what you are proposing, you believe that the CAN needs to be replaced by fibre?

Mr Moore—Absolutely. ADSL is out of date; it needs to come out. It was a short stop.

Senator LUNDY—Can I just ask you about the backhaul scheme on the inland route, which you showed in your last slide. Is that a new piece of infrastructure, or at least largely upgraded with some part of it being new?

Mr Moore—The dark blue part largely does not exist one little bit. So that piece is necessary.

Senator LUNDY—And the light blue?

Mr Moore—From the coast going inland, yes to a pretty large degree. That north-south run of light blue does not exist. The ones going inland from there basically does not exist either. So you have a lot of build to put in there. Understand that most of Queensland is radio CAN.

Senator LUNDY—Yes, it is ancient.

Mr Moore—That is why I am saying you should put it down through the middle of there.

Senator LUNDY—Yes, I do understand, and its capacity to provide bandwidth for what we use it for these days is virtually nil.

Mr Moore—It is not in the race. I was going to provide another slide, but I would be breaking the bad copyright rules!

Senator LUNDY—We would not want you to do that.

Mr Moore—I wouldn't.

Senator IAN MACDONALD—What would the slide have shown?

Mr Moore—The entire network.

Senator LUNDY—As it currently is?

Mr Moore—Very recently.

Senator IAN MACDONALD—For all suppliers, or just for Telstra?

Mr Moore—I have got a few of them. I have worked in consultancy companies recently, and I know what is in every NGN, the whole lot of them. I know what every network is and how they are all put together.

Senator LUNDY—With the government's policy on NBN, do you see what you are proposing in this slide as a good place for the backhaul infrastructure investment to start?

Mr Moore—Absolutely. It needs to go in first, and then you can put the CAN in certain places. But they should not be separate companies, and the NBN should not be run as a competitive company; it has got to run as an infrastructure company. It should never be privatised. That is lunacy, stupidity.

Senator LUNDY—So your main contention with the structure of the NBN is the concept of it ultimately being privatised, as opposed to just continuing on as an infrastructure wholesale structurally separated provider of bandwidth to retail service providers?

Mr Moore—That is exactly right.

Senator LUNDY—I just wanted to clarify that.

Mr Moore—If it gets privatised we will go back to exactly the situation we have had in the last 30 or 40 years.

Senator LUNDY—Don't you have confidence that the ACCC will make sure that the regulatory environment for a single infrastructure wholesale provider will be rigorous enough? Is that your problem?

Mr Moore—I appreciate that, but I do not look at the frame of reference over last 30 years or so. It has not worked. That is why I changed my frame and said, 'Do they need to be involved at all? No, they don't.' If the frame of reference is right they do not need to be involved. They need to be involved at the reselling end, not at the infrastructure end, so get them out of there and that will halve their workload.

Senator LUNDY—But they would surely need to still oversee pricing and so forth on the infrastructure network.

Mr Moore—That is retail reselling.

Senator LUNDY—I see.

Mr Moore—That is not infrastructure; it is different.

Senator LUNDY—It depends how you describe it. It would still be a regulatory oversight of the wholesale infrastructure provider, I would expect.

Mr Moore—Agreed, but the infrastructure is immediately an almost level playing field—almost level—where they do not have to be involved. The resellers can resell the bundled packages the way they want to and it can be structured so that every system can be an open

access system. Every retailer can have their own home page logon when they have their own system—when you bring up your mobile it comes up with whoever is your preferred carrier, although it is one carrier underneath.

Senator LUNDY—Going back to your point about hybrid fibre-coax, my understanding is that you see that more as part of the CAN and therefore the discussion and debate about structurally separating that from Telstra as it currently stands is a moot point. Is that the point you are making?

Mr Moore—The stupid thing is that it is coax from a house to a node in the street somewhere, on a power pole or underground and then fibre back to the local exchange. From there it goes into a broadband router, basically, which also connects to ADSL, which also connects to mobile radio, if you want that sort of thing, which also connects back to two big routers. Now we are talking backhaul. It is all continual. You cannot cut it off because, where you cut the CAN from the backhaul is in the middle of a piece of equipment where the signalling changes from customer signalling to network signalling. You just cannot cut it. It is like getting a hacksaw and going to the middle of a fridge and saying, 'The back half will hold the beer and the front half will hold the wine.'

Senator LUNDY—To nail this point down, under the idea of a separate, wholesale only infrastructure company and competing retail arms, in your view what needs to happen with, firstly, the ownership and, secondly, the management and location, if you like, of the HFC within that physical network?

Mr Moore—In my view, the HFC would be part of the infrastructure business entirely—it would be all in there—so that, if the retailers want to sell it, they would buy, say, 100,000 lines of it at a wholesale price and their customers would buy that retail. It may be a package with internet or without internet, with service standards of certain grades or with or without pay TV—those sorts of things.

Senator LUNDY—Would competing retailers be able to consecutively access HFC under your model?

Mr Moore—Anytime they want to, anywhere at all, immediately. In fact, they would not even have to touch it. All they would do is get on a computer, stipulate that customer A and customer B want certain services put together and it is done. They do not actually have to do anything other than sit in an office. They do not even touch the infrastructure at all; they just rake the money in.

Senator LUNDY—I think I have got the point you are making. Thank you very much.

Senator MINCHIN—Many of the issues that I would have raised have been raised appropriately by Senator Lundy, but I understand you are saying that you oppose the government's proposal to establish a commercial entity, for the time being called NBN Co., to roll out separately and independently a fibre-to-the-premises network, potentially in competition with other fixed line infrastructure providers. That is your essential thesis, is it?

Mr Moore—Essentially, yes.

Senator MINCHIN—So you are saying that, really, this optical fibre rollout can only be done in conjunction with or involving Telstra and there is no other way to do it?

Mr Moore—It makes lots of common sense. They would argue they do not have a monopoly of the infrastructure. Depending on how the teams of lawyers look at it, they could probably come up with that argument. Physically, they have the ducts in the ground and they have the backhaul area, which also goes in ducts to a large degree. Setting up one in competition with Telstra does not solve the problem. It only keeps it going on and on and on. You would be far better to have Telstra agree that it wants to get into content because that is where the money is and into retail reselling because that is where the money is. They have got BigPond. They have been marketing this for years. All they have got to do is move that across. They could use one of their buildings in Sydney as their headquarters for that and have multiple buildings around Australia for that. Their Telstra shops could become BigPond shops—that is no big change. Melbourne has the infrastructure headquarters, and they have got infrastructure offices in other states. They can use those doing the local engineering work and that sort of thing. It makes lots of sense to me.

Senator MINCHIN—You were a Telstra employee for many yours, were you?

Mr Moore—Yes. I was employed in 1966 as a technician, engineer, manager.

Senator MINCHIN—So you are aware of the expertise that lies within Telstra in managing big infrastructure systems.

Mr Moore—Yes.

Senator MINCHIN—One of the things that intrigues me is, for all the vision of the NBN, how is it proposed that you can create from scratch a company with the expertise to build, own and operate a highly sophisticated national fibre-to-the-premises network covering 90 per cent of Australian premises if Telstra is not involved? Is that expertise just sitting there waiting to be harnessed by this new company, just ready to go?

Mr Moore—That is a very good question. If you looked around, I think you would find several thousand engineers, technicians, field staff that have left Telstra that have got a lot of expertise—and also executives. There would be no problem there.

Senator MINCHIN—They are not sitting idle. Where are they?

Mr Moore—Basically a lot of these companies like to keep their employees under 40. When they get over 40, they are usually in the departure lounge.

Senator MINCHIN—Is that right?

Mr Moore—Well, I am 60 and I have been retired for 10 or 15 years. I have worked in between occasionally on a few other things on the way through. But the expertise is there. The Telstra wholesale side has got all the infrastructure buildings there sitting waiting for it to happen. There is the floor space in almost all the buildings, sitting waiting for it to happen. It is a

massive undertaking if you have not done that sort of work before. To me, it is not a big undertaking.

Senator MINCHIN—Can it be done in eight years?

Mr Moore—Yes. Most infrastructures, when you come to put them in, take in the order of five years. When they brought in AXE infrastructure in 1980, it took till about 1990 before it really kicked in, because that was the first digital that went in, and the transmission was not fully going until 1995. I actually designed the first Sydney to Melbourne optical fibre. I was a junior engineer when I did that in 1985. It was 1987 when that went in. So you get an idea. That was a pretty big one in those days. It has been rebuilt, I think, three times since then.

Senator MINCHIN—Your bottom line is that basically all the telecommunications fixed-line infrastructure, which in your thesis includes the CAN—

Mr Moore—It is the CAN, yes.

Senator MINCHIN—should be a government monopoly.

Mr Moore—I do not use the word 'monopoly'.

Senator MINCHIN—What is it if it is not?

Mr Moore—It is government infrastructure.

Senator MINCHIN—But you do not want any competition. Your whole thesis is that we should not be in this competitive—

Mr Moore—We should not have competitive infrastructure.

Senator MINCHIN—So it is a monopoly.

Mr Moore—No. 'Monopoly' is the wording of a competitive regime.

Senator MINCHIN—Well, there is one provider.

Mr Moore—One provider.

Senator MINCHIN—Okay, let's not call it a monopoly; just one provider.

Mr Moore—A monopoly is there to maximise its profits.

Senator MINCHIN—This is a government entity which is run along the lines not to make a profit.

Mr Moore—It is run along the lines to maximise service and maximise service quality.

Senator MINCHIN—Do you think the government would supply all the capital for this infrastructure?

Mr Moore—It would get its return by savings in health, improvements in education and improvements in trade.

Senator MINCHIN—So it should deliberately provide these services simply at cost, should it, and not seek to make any return on any of the wholesale services it provides?

Mr Moore—It would be. The retail resellers would be buying those services at wholesale prices and selling them to the general public. So the retail resellers will be paying the infrastructure business.

Senator MINCHIN—Sir, you do not think that the experience of state owned electricity businesses or infrastructure is a sobering lesson in all this? You might honestly—

Mr Moore—Can I tell you a very quick story on that one. About three years ago, I was at an Engineers Australia meeting in North Sydney and people were talking about the New South Wales energy thing. There was a person from Germany there, and he was talking about the life of transformers and how long they could survive. He was saying that, if transformers are maintained properly, you will normally get 30 to 35 years out of them before you have to replace them. I thought to myself: 'That makes sense. That lines up with all the other Telecom equipment. That makes sense with power equipment.' And he said: 'Except if you don't do maintenance and you don't replace the oil at least every five years. If you don't that, their life is about 15 or 20 years.' These transformers cost hundreds of millions of dollars. The room had been chatting away but, when he said that, the room went quiet. I looked behind me and there was a row of accountants whose faces were white. They had stopped maintenance because they were maximising profits for their shareholders. Guess what? Transformers are blowing up everywhere. And why would that be? Because the approach has been all about minimising overhead costs to maximise shareholders' profits, and they realised then that they had made a bad mistake.

Senator MINCHIN—What I am reflecting upon—and having been in government, I am aware of this—is the tendency for governments to decide that they are not going to invest in the maintenance of their infrastructure because of the demands from every other part of society.

Mr Moore—Yes.

Senator MINCHIN—This is why successive Labor premiers of New South Wales have said, 'We should be privatising this because we, the government, don't have the $5 billion, the $10 billion or whatever it is that is required to maintain and improve the electricity transmission system. The thing I fear about your model is that that is exactly the situation we would end up with, with telecommunications infrastructure if it was provided by—let us not use the word monopoly—one provider, owned by the government. The investment would not be sustained in the system, which is, as I said, why Labor premiers of New South Wales know that they have to privatise their electricity systems.

Senator LUNDY—Maybe I could venture to add, Senator Minchin, the instructive case of Telstra's poor record of capital investment during the course of the privatisation strategy under your leadership—

Senator MINCHIN—And when they were government owned.

CHAIR—I wonder whether the witness would like to comment on this enlightening exchange, Mr Moore.

Mr Moore—Yes, I can.

Senator LUNDY—I could not help myself there. Senator Minchin deserved that one.

Senator MINCHIN—Oh, I don't know.

CHAIR—Thank you, Senator Lundy.

Mr Moore—There is a problem with what you are saying there, Senator Minchin. When Telecom Australia changed over from state management to regional management, there was a massive change where they picked up the state controlled networks and made them into a nationally controlled network. They found massive productivity differences and different standards between the states. I spent quite a few years straightening out those standards so that they would all align. That, by the way, made it possible to use faxes and modems. You could not use them before then, because you would have howling and echo and those sorts of things everywhere. That was one of my little things to sort out.

You have the same problem with the electricity commissions. They are state operated, not federally operated. And they are not funded appropriately. This is why the state governments have the problems they have got. The money has not been put in where it should have been put in to cover these costs.

Senator MINCHIN—That is certainly true.

Senator IAN MACDONALD—Mr Moore, thank you for your submission. As a Queenslander, I like your proposed backhaul. We might get some decent—

Mr Moore—It would make a massive difference to your area, believe me.

Senator IAN MACDONALD—I can appreciate that from what you say. Under your proposal, what percentage of Australia would have decent if not fibre to the premises close to it services? The government were talking about 98 per cent. They are now back to 90 per cent. What do you think?

Mr Moore—Considering that optical fibre has a reach of up to about 60 kilometres, you basically have a situation where most of the country areas can be covered, and that leaves very small pockets. I would say that, with optical fibre to the home, it would be well in the high 90s.

Senator IAN MACDONALD—I do not want to get into too much detail, but would your proposal service Birdsville? That always used to be my criterion.

Mr Moore—Where is Birdsville located?

Senator IAN MACDONALD—It is in the south-west corner of Queensland. You do not know where Birdsville is? That is a disgrace.

Mr Moore—I did not put a dot on my map to say where it was.

Senator IAN MACDONALD—It is right in the south.

Mr Moore—Is it about there on the map?

Senator IAN MACDONALD—Yes.

Mr Moore—Birdsville is a long way from nowhere. The nearest one would be Tibooburra or Longreach or thereabouts. You would possibly put an optical fibre spur out from there as a second phase.

Senator IAN MACDONALD—You could do that?

Mr Moore—You could do that, but you cannot do it right now because that north-south high capacity link is not there. If you put a spur out there at the moment, there is nothing for it to connect to. That is what you need this piece of infrastructure for.

Senator IAN MACDONALD—I noticed that your presentation was entirely east coast-centric. What do you suggest for Western Australia?

Mr Moore—Western Australia actually has a backbone of sorts that runs down it fairly well.

Senator IAN MACDONALD—Who provides that?

Mr Moore—Telstra. It goes from Perth up to Carnarvon, to Exmouth and across up to Port Hedland. It then goes inland and comes up via—

Senator IAN MACDONALD—Does it get to Kununurra?

Mr Moore—Yes. There is a spur that runs off to Kununurra.

Senator IAN MACDONALD—Do you think it is necessary for the government to take over the Western Australian operations, or could they leave that with Telstra?

Mr Moore—If the NBN and Telstra worked together instead of the word ‘takeover’, it is all done. They would be looking at increasing the capacity of the optical fibre by putting bigger systems on them. I was involved in installing a system in New Zealand in 1998. It was for 625 megabytes. That was the biggest one that they had at the time. Shortly after that, a 2.5 megabits a

second system went in. The hybrid fibre-coaxial in Sydney that I was involved in installing uses one gigabit feeds everywhere, and they have two of them going back to their places. Telstra were upgrading those by a little piece of infrastructure called a GBIC from one gigabit to 10 gigabits. So you can up that speed, and that is over a direct line of up to about 30 or 40 kilometres. If you are running systems down the western side of Australia, you would have to considerably improve the transmission equipment there so that it has the capacity to handle high speed broadband for the customers.

Senator IAN MACDONALD—Finally—and perhaps this is not part of your submission—you are suggesting that the government would come to some commercial arrangement to buy out Telstra's infrastructure, or are you suggesting that they should be confiscated?

Mr Moore—That is a very good question. I would actually take a different approach and say that if the Telstra shares were stopped from being traded, taken off the market and given, say, a seven-three split—that is, for every 10 Telstra shares you are given seven TIW and three BPD shares—

Senator IAN MACDONALD—What do you mean by TIW and BPD?

Mr Moore—TIW is Telstra infrastructure wholesale and BPD is BigPond. Then you could put those back on the market once you have restructured the buildings and the people, which would not take long. Then the government could offer to sell their portion of BigPond shares as a one-for-one swap so that they get any remaining Telstra infrastructure wholesale shares. They may have to buy little more from that point, but it would not take much for them to have over 50 per cent, which would give them complete control.

Senator IAN MACDONALD—So for the 10 shares that I hold in Telstra I would get seven infrastructure shares and three retail, and I would be hoping the government would come along and make me an offer I could not refuse for my seven.

Mr Moore—It would be a one-for-one swap to sell the Telstra shares and get more BigPond shares. You as a private citizen would then have all your shares with BigPond, the company doing the retail reselling, which is where the money is, and the Telstra infrastructure wholesale shares would become majority owned by the government.

Senator IAN MACDONALD—This is on the basis that the government still own a swag of Telstra shares.

Mr Moore—I do not know how much it owns at the moment.

Senator IAN MACDONALD—When are they getting rid of the government's Telstra holding, Nick?

Senator MINCHIN—They are all in the Future Fund. There is a schedule of progressive rundowns but staged so as not to upset the market for shares. So the Future Fund is entirely in control of that, and obviously they are going to do it very gradually so as not to flood the market with Telstra shares. Sixteen per cent of the company is tied up in the Future Fund.

Senator IAN MACDONALD—But, Mr Moore, what you are suggesting is the government and the Future Fund are the same thing.

Mr Moore—Effectively.

Senator IAN MACDONALD—I guess they are, but the Future Fund was there for a purpose.

Senator MINCHIN—It is bound by its act to preserve its funds for dealing with Commonwealth superannuation, not to be a vehicle for government public policy in any other respect. So you would have to start by changing the Future Fund Act, which would be a radical move.

Mr Moore—I am sure there are some legal minds who could work that one out. They could do it.

Senator IAN MACDONALD—But at a pinch the government would just be buying out the share market at market value.

Mr Moore—They could do that. It has come down from $8 to $3, so things are looking pretty good. If it waits another year it will be $2.

Senator MINCHIN—The government could buy the shares from the Future Fund, theoretically.

Mr Moore—They could. It could be done, they could get more than 50 per cent control, they could do it from that point and those shares could be changed into bonds if they wanted to.

CHAIR—Thank you very much for your time today, Mr Moore. It was very interesting.

[9.58 am]

COLACINO, Mr Peter, National Manager, Policy, Infrastructure Partnerships Australia

LYON, Mr Brendan, Executive Director, Infrastructure Partnerships Australia

CHAIR—Welcome. The proceedings today are public. You are protected in providing your evidence by parliamentary privilege. A third party attempt to interfere in any way with evidence given by a witness could be unlawful and could indeed be contempt of the Senate. If at any stage you want to provide your evidence in camera, please make that request to the committee and the committee will consider your request. I invite you to make an opening statement.

Mr Lyon—As senators know, Infrastructure Partnerships Australia has previously submitted. Indeed, I had the pleasure of appearing before this committee during a previous hearing. I therefore welcome the opportunity to join you once again and to assist the committee where I can with your very important deliberations on this national network. By way of background, my organisation is the peak infrastructure body of Australia. We represent the nation's largest constructors, operators, designers and financiers of infrastructure, with a significant portion of our membership drawn from the public sector. Around 40 per cent of our members are drawn from Commonwealth, state and major local governments right across the country. This duality of membership is important because it recognises that the delivery of infrastructure in Australia requires a genuine partnership between the public and private sectors to make sure it comes to fruition.

My organisation is dedicated to improving the provision of infrastructure in Australia, recognising the proven link between productivity and infrastructure development. That is why we have a strong focus on the development of a truly national broadband network. A national broadband network would have profound positive and transformational impact across Australia's economy. The development of an NBN will represent a landmark investment in Australia's economic infrastructure. It is therefore of critical interest to not only the infrastructure sector, which will design and construct it, but also the broader community and the business community, which will benefit directly and indirectly from its development.

The rollout of a national broadband network has the potential to deliver a measurable and significant productivity enhancement across Australia's economy. This committee has already heard evidence at previous hearings and through many of the submissions it has received about the link between telecommunications infrastructure and economic productivity. IPA's submission, which you have before you, references some of this research. To put it in context, a high-capacity, high-speed and highly functional national broadband network could offer the kinds of transformation that were brought about by, say, steam trains in the 19th century or the widespread adoption of motor vehicles and highway networks through the 20th century. Road and rail brought together knowledge and productive capacity, and I submit that the development of a national broadband network could offer the 21st century equivalent.

Done well, a high-speed broadband network has the potential to bring together people, ideas and knowledge in new ways. It will provide a fundamental overhaul in the way information is

shared and business is conducted. However, beyond the physical components, the NBN offers the opportunity to fundamentally realign the regulatory structure which sits around our current telecommunications market and offers the opportunity to right some of the errors of the past. IPA therefore recognises the NBN rollout will provide an intergenerational opportunity to undertake market reform to enhance the productivity and efficiency of Australia's telecommunications sector, to encourage increased private sector participation in the market, to promote investment in new infrastructure and to develop strategies which derive maximum benefits to taxpayers and to the economy.

While we support the development of the NBN and the government's stated aim to deliver a competitive market structure and separation between the NBN co. and downstream retailers, this committee and parliament should also be looking to undertake regulatory reform in the current market—that is, in the pre-NBN market. The problems that have existed in Australia's telecommunications market, the conflicts and the lack of competitive tension, have not gone away because we are planning a future national broadband network. It is very clear that the current regulatory and policy framework has not facilitated suitable levels of competition between retail service providers in Australia's telecommunications marketplace.

A principal driver of the need to reform the pre-NBN market is the potential for exploitation of market power within Australia's current fixed line market and the difficulties that existing regulation has had in delivering a competitive market. This lack of competition occurs in spite of the operational separation between retail, wholesale and network divisions of the incumbent Telstra. The objective of the current structure was to allow Telstra to glean legitimate benefits from its vertically integrated structure while ensuring that it did not discriminate in favour of its own retail activities. It is now broadly accepted, including by the ACCC, that the current market structure has failed to ensure a robust, competitive market. The current system of vertical integration with operational separation has allowed Telstra to undermine competition within the market. The current regulation could allow Telstra to refuse to sell services to retail competitors, and Telstra could provide better services or higher standards of service to advantage its own retail customers.

IPA therefore submits that this committee and parliament should pursue a regulatory path that provides structural separation by splitting the existing Telstra business into two new entities: a wholesale provider and a retail access company. Existing Telstra shareholders should be compensated through the splitting of existing shareholdings in a one-for-two exchange of shares from the single current entity to two new businesses. Beyond the commonality of their shareholders, these two new organisations would operate as wholly separate entities, with separate governance structures including a board, chairman and executive and, over time, separate ownership as a function of share market turnover on the stock market. By moving toward a 'two Telstras' model, important competitive tension can be introduced to Australia's telecommunications marketplace at a retail level in the current fixed-line market in the short term while also allowing shareholders in the existing entity to derive maximum value from their current investment.

As I have already stated and as the committee has previously heard, it is very likely that the NBN will be a monopoly, with duplication likely to be uneconomic at any point in the future. Infrastructure Partnerships Australia therefore supports the commitment of the government to ensure separation between the ownership of the wholesale network and of downstream retailers.

Structural separation is widely regarded as international best practice within the telecommunications sector and in Australia this has been the default approach we have adopted in reforms to gas and electricity markets. The existing fibre networks maintained by industry participants should provide the foundation block for the National Broadband Network. Many established fibre assets could provide useful components of the new network, as they are largely concentrated in relatively densely populated areas. The utilisation of these assets as the platform for the rollout of the NBN provides an opportunity to reduce the overall cost of the rollout, to reduce the time frames for the delivery of the network and to expediently open the NBN to the nation's largest markets, facilitating high penetration rates and enhancing the likelihood of the network's commercial success. Of course, we are not suggesting these assets be nationalised. The owners must receive just compensation and this process must occur in a cooperative manner.

Beyond the initial commitment to the role of the private sector in the development of the network, an ongoing review of opportunities for commercialisation of components of the project and/or the early exit of government from network ownership should remain a principal focus. The development of the governance model for the network must seek to bring to the project individuals with a strong focus and ability to ensure the successful commercialisation and commercial viability of the project over the short, medium and longer term. The appointment of key people within the NBN company—that is, people with experience in financing, regulating and constructing infrastructure—will be critical to the success of the project in attracting investment and to its successful delivery. The use of Treasury issuance in the form of Aussie infrastructure bonds is an appropriate way to raise public debt to fund the public component of the project, but the use of debt must always be prudently managed within the context of the broader economic management of the Commonwealth's balance sheet.

The management of design and construction elements of the project will require strong focus and strong execution skills. Obviously, when we are talking about a project with anticipated capital costs of $43 billion, even slight cost overruns are significant in scale. In our submission, we point to the excellent experience of Australia's state governments in harnessing the private sector to reduce cost and time overruns and to manage risk to taxpayers in infrastructure development. This committee and the government would be prudent to focus on the best and most appropriate delivery mechanisms and structures to ensure outstanding cost discipline and project management as we move to implementation.

A significant hurdle for the National Broadband Network could also be planning approvals and mechanisms. Concurrently with moves to bring clarity to the financing, construction, engineering and technology requirements of the network, this parliament should also give regard to how it gives certainty to the project in a planning, development and construction sense. The appointment of a strong, credible and skilled chairman, board and chief executive of the NBN company will play a significant role in the ultimate success of the government's stated objectives.

In conclusion, the commitment to deliver a high-speed, high-bandwidth and highly functional NBN is a very positive development for Australia. Australia's economy, our education sector, medicine, sciences and business, as well as domestic consumers, have much to gain from the development of an NBN. Of course, much has already been said about the likely changes that an NBN would bring in terms of how Australia does business in how we learn and how we better

compete in the international economy, but it is hard for us now in 2009 to anticipate what this kind of network will do and what kinds of innovations it may deliver. Speaking in 1943, Thomas Watson, the chairman of IBM, said, 'I think there is a world market for maybe five computers.' In 1949, the journal *Popular Mechanics* said, 'Computers in the future may weigh no more than 1.5 tons.' I contend to the committee from the outset that a network which delivers a near 100-fold increase in data speed will empower business, academia and domestic consumers to develop innovations beyond the scope of what we can contemplate or envisage now. I commend the NBN to the committee and look forward to your questions.

CHAIR—Thank you.

Senator MINCHIN—For the record, Mr Lyon, your organisation is made up of the infrastructure industry in Australia, as I understand it.

Mr Lyon—That is right.

Senator MINCHIN—Leightons and all those sorts of people. So you have a vested interest, by definition, in government spending lots of money on infrastructure, no doubt.

Mr Lyon—Our organisation is not a private sector cheer squad. About 40 per cent of our membership is drawn from the public sector. What we have an interest in—

Senator MINCHIN—That is what I said—government spending money on infrastructure.

Mr Lyon—Yes. What we have an interest in is seeing infrastructure developed. Of course, our membership have an interest in seeing infrastructure developed but the economy also has an interest in seeing infrastructure developed.

Senator MINCHIN—But presumably developed so that it is commercially viable. Would that be right?

Mr Lyon—So it is commercially viable?

Senator MINCHIN—Is that a criterion you apply to infrastructure in this country or not?

Mr Lyon—Certainly when you are looking at the private delivery of infrastructure it needs to be commercially viable, but there is also infrastructure which is delivered by governments, for a range of reasons, which may not have a commercial viability but is nonetheless necessary, like local roads and so on.

Senator MINCHIN—Pardon me for not remembering the detail of your submission, but I presume you were supportive of the government's original NBN policy, which was to contribute $4.7 billion of government money to a fibre-to-the-node network, with the rest to be supplied by the private sector, which would have cost—there were various estimates—between another $5 billion and $10 billion, so up to maybe a $15 billion project. You were presumably quite supportive of that.

Mr Lyon—Yes, we were.

Senator MINCHIN—Listening to you today, nothing seems to have changed in that sense, but a lot has changed. We are now talking about a completely different project, one that is going to cost three times as much, that will absorb an extraordinary amount of the available capital in this country for infrastructure, that will be established under a majority government owned company but on a commercial basis, with a sell-down in five years time to be a private sector operation. But your rhetoric on this does not seem to have changed at all. Prior to the government's 7 April announcement, it was hard to find anybody in this country who would suggest that a fibre-to-the-premises network in this country could ever be commercially viable. As I think I said, sure, we would all love optical fibre to everybody's home. That would be wonderful. As I said at the time publicly, I would love a divided freeway between Adelaide and Melbourne, because I hate that drive, but no-one is going to build it for me because it does not make economic sense. No-one thought having a fibre-to-the-premises network around Australia made economic sense. That is why the government originally proposed fibre to the node. Now we have the proposition where the government may have to borrow—and it is saying it may be inclined to borrow—up to $40 billion to stick into this thing, on the basis that it is going to be commercially viable. Do you accept all those premises? That is my point. I do not see a change in your rhetoric at all. You are just saying: 'Yeah, yeah, let's have the NBN, whether it's $4.7 billion or $40 billion. What the hell, let's do it.'

Mr Lyon—It is certainly not a 'what the hell' position that we come from. As I said in my opening statement, it needs to be very carefully structured and delivered. There is always a risk of cost overruns in major projects. The government, as they move through the implementation studies, as they engage their financial advisers and technical advisers, need to be very mindful of the risks that sit around delivering large projects—the potential for cost overruns, the potential for commercial failures. But, at the moment, we do not have a project. At the moment, we have a policy aim. We are now moving through the process, through the implementation study. The government are moving down the path of putting scope and detailed studies around how and what the National Broadband Network will be, how it will operate and what the project components of the process will be. But clearly there are risks. That is exactly why they need to move through a very rigorous implementation study. It is why they need to move through a rigorous process of assessing the legal, technical and financial requirements that sit around developing something of this scale.

As I also said in my opening statement, the level of debt that is required to build the project does need to be carefully managed within the broader call on the Commonwealth balance sheet. So certainly we are not suggesting that it is a devil-may-care approach. This is a large project, but it is something that the infrastructure sector called for when we put out a major paper in 2007 called *Australia's infrastructure priorities: securing our prosperity*. We called for a range of reforms across a range of sectors, including transport, social infrastructure, energy and telecommunications. In that paper, we argued that Australia should be moving down the path of a fibre-to-the-premises network within, I think, a decade, although I do not have the paper with me. Certainly we are starting to see that now. So it is something which has had our support. It is not a sudden change in our rhetoric. It is not us adjusting our position because of government policy or government press releases. As with all of our positions, this follows a long-established policy basis which we pursue as sector.

Senator MINCHIN—With major infrastructure projects that you are familiar with, would it be normal for cost-benefit analyses to be done before you embark on spending billions of dollars?

Mr Lyon—Cost-benefit analysis is an important tool to assess elements of a project, but it is one of a dashboard of measures that are used.

Senator MINCHIN—A dashboard of measures; that is a new one. I will remember that.

Mr Lyon—It is one of a range of measures that governments can use to assess the attractiveness of particular projects. It is obviously important that projects have a reasonable cost-benefit analysis or a reason why governments want to do it, irrespective. Clearly, there is more detail which will come out through the implementation study about the costs and the benefits of this project, and we look forward to seeing them. But, on the face of it, we do support and have always supported from our foundation as an organisation a move to a fibre-to-the-premises network.

Senator MINCHIN—But you understand that the government is refusing to conduct a cost-benefit analysis on this project?

Mr Lyon—Yes. The other point I would make to you is that, for instance, when the harbour bridge in Sydney—which I think everyone would agree has a significant benefit to the national economy as well as to the mobility and functionality of Sydney—was delivered, when it was opened and when the ribbon was cut, there were fewer than 10,000 motor vehicles registered in New South Wales, and they built a bridge at that time which had a deck of 49.2 metres and eight lanes and that integrated heavy rail and tram. The point is that the cost-benefit analysis of that project at that time would have been lethal, but at the same time it is a project which has added to Australia's prosperity and to our productivity. I am not saying that cost-benefit analysis is not important; it clearly is. But it is one of a range of measures which governments look at when they are moving—

Senator MINCHIN—But don't you think it is extraordinary that the government simply refuses to do any cost-benefit analysis while putting at risk $43 billion worth of taxpayers' money in what it claims is the biggest infrastructure project of all when the government itself, in its own Infrastructure Australia criteria, says, 'We will engage in rigorous cost-benefit analysis before committing taxpayers' dollars to projects'?

Mr Lyon—We are very supportive of full transparency when it comes to the allocation of taxpayers' money and indeed the selection of infrastructure projects. We have been put on the record as supporting full transparency where there is no commercial-in-confidence information. We would argue that the government should make available all relevant information that is not commercial-in-confidence.

Senator MINCHIN—If this thing proceeds, the government will have to borrow at least $20 billion to get its 51 per cent of the project and will be asking the private sector to invest the other $20-odd billion. Are you happy that there is the sort of market for that sort of capital, that it will not cause crowding out of available investment dollars, that it will not increase the price of investment dollars in the market and that other projects may fall by the wayside because they are

rendered unviable because of the cost of capital or the availability of capital as a result of this project proceeding?

Mr Lyon—In debt markets at the moment for, say, a PPP project, you could raise around $500 to $600 million in Australia's markets. We are hopeful and believe the debt markets will recover—

Senator MINCHIN—Millions?

Mr Lyon—Yes, $500 to $600 million. Above that, there is no competitive tension because foreign banks have retreated from Australia, but that is a function and a domestic impact of a wider global liquidity problem. We believe that that will improve as the global economy starts to recover. As to the impact of investments of this size, clearly there would be a competing call, but I think it is very early for us to start thinking about what sort of investment model might be used. At the moment we need to work out what the project is, where it is going run and the kinds of technologies which are going to be used to power it. It is a very early stage for us to start thinking about what sorts of investment models might be used to deliver it and what sorts of capacities might be there in a public or a private sense. What we and the government need to do is move down the path of better defining the project, and that will come through the implementation studies as they are ongoing.

Senator MINCHIN—You have still got to raise $43 billion.

Mr Lyon—It is a lot of money; there is no doubt.

Senator MINCHIN—You are a strong advocate of breaking up Telstra. This being a parliamentary committee, is that something that your organisation would say, if necessary, should be by force of law?

Mr Lyon—I understand there has been a range of advice given to government over time about what they can and cannot do. We would think that it should be a cooperative process with Telstra—clearly you do not want to have governments going in and forcibly breaking up private enterprise where it is avoidable—but, at the same time, it is clear that it has not been an optimal market structure and if there is an ability to move down a cooperative path then I think that should be explored. I think that there would potentially be some benefits to existing shareholders of Telstra and it would also give them the potential to have an equity stake in the National Broadband Network as we move down that path.

Senator MINCHIN—But you are not advocating to this committee that, if Telstra decides it is not in their interests to break the company up, the parliament should pass a law to force them to do so.

Mr Lyon—That is a very difficult question and one I would leave as a policy decision to the parliament, I think.

Senator MINCHIN—You have enunciated a lot of policy here today, Mr Lyon. You are not scared of indicating policy directions that we should take. I am happy to receive your advice. You have advocated separation.

Mr Lyon—We are on the record as supporting separation of Telstra.

Senator MINCHIN—Yes, but should the parliament legislate to force such a separation or not?

Mr Lyon—I think the parliament and the government should be exploring a cooperative model with Telstra. They have certainly signalled that they are keen to cooperate with the government, and I think that should be the first point of call.

Senator MINCHIN—When this was looked at in our government, it was pretty clear that there would be a considerable loss of value to Telstra and its shareholders, which at that time happened to be the government, from any forced separations of the business. Would you accept that there may be a need for the Commonwealth taxpayers to compensate Telstra shareholders for the loss of value? It would seem pretty clear to me, and I do not know that you would dispute it, that there would be a net loss of value from breaking the company into two that somebody would have to be compensated for.

Mr Lyon—The commercial interests of Telstra, its management and its shareholders are not necessarily the public policy interests of the Australian government, the parliament or taxpayers. We would argue that there would be a method to begin to structure that with a minimum loss of value for shareholders, and we would argue that that should be pursued, but I do not think that exposing taxpayers to a huge liability for the losses of private investors is necessarily good policy.

Senator MINCHIN—Finally on this structural separation, of which you seem to be a very keen advocate, are you able to point me to any reputable international study of an example of structural separation occurring where the telecommunications outcomes are considerably better than in jurisdictions where structural separation has not occurred?

Mr Lyon—It is clear when you look around the world that there are no particularly strong case studies of where this has been done but, at the same time, if you look at markets like New Zealand and the United Kingdom then you can see that they are beginning to move down the path of a structural separation—Singapore as well. They have moved to functionally separate their providers and they are moving down that path. So certainly there is a direction which is being spelt out. But Australia is also moving out into the front of the developed world in terms of its moves to reform its telecommunications network. Someone has to be first. So, no, there is no strong history of case studies, but we are moving down a unique path—we are moving down in a world-leading direction—so that is not a particular surprise.

Senator MINCHIN—I will defer to the others, but is it your contention that the government should proceed with this NBN with or without Telstra? Let us say that Telstra say: 'Look, it's actually not in our interest to break up the company. We don't want to roll in the copper. We're happy to proceed as we are. You go and build your NBN; we'll just keep investing in our copper. We're happy to compete with the government's NBN.' Do you think that is a realistic scenario or is the NBN really unrealistic without Telstra rolling in and cooperating?

Mr Lyon—Again, it is difficult for us to say—it extends beyond the detail in which we have studied this—but I would also say that it is obviously desirable in terms of making the NBN a

commercial proposition that it be a single, separated network provider. So we would think that an approach that is cooperative between all of the incumbents would be best. One of the other things which would benefit the delivery of an NBN is the ability to roll in the fibre which already exists around various parts of Australia. So we would argue that a cooperative approach, where it is possible, would obviously be very desirable and would offer the ability to lower the overall capital cost of the project and deliver it in a way which is less risky, because you already have elements of the project which are delivered. Do we think that there should be an all-out war between incumbent telcos in Australia to get this thing delivered? Of course not; we think it should be a cooperative approach. If it is done well and done cooperatively then Australia does have an ability to deliver a transformational leap forward in terms of its telecommunications networks. So we would argue that it should be a cooperative process.

CHAIR—Mr Lyon, you talked about rolling in. Does your organisation have a view as to whether this NBN proposal should focus on underserved areas, be they urban, regional or rural, rather than areas in which competition is sufficiently robust to arguably deliver the product in any event?

Mr Lyon—This question came up last time I appeared before the committee. We have a view of this as a national network, so we do not have a particular view about which area it is delivered in first. I do note that the government is doing delivery of a Tasmanian NBN, which is an underutilised market. If it is possible, desirable and fits within the frame of what is achievable, then we have no particular view about whether or not it starts in areas which are underutilised. What we have a strong view on is that this project being very carefully scoped and very carefully delivered to make sure that it is commercially viable and we are not exposing taxpayers to risk. The overriding focus should be to make sure that we minimise and mitigate the risks to taxpayers in the delivery.

Senator MINCHIN—Hear, hear!

CHAIR—Have you seen any evidence of careful scoping thus far?

Mr Lyon—The government are moving down the path of doing an implementation study. That is when we will begin to see these kinds of details and structures considered. It is going to be a lengthy process. We are talking about delivering a fibre-to-the-premises network which reaches 90 per cent of Australians, so it is obviously a very significant scale of project. It is going to be a very complex project to scope, manage and so on, so the government should take its time. The NBN company and the department of broadband should take their time to make sure that they are properly scoping upfront the risks, the technologies and so on to make sure we get it right in the delivery.

CHAIR—Some may have the view that there is time being taken at the moment. Do you think that time is being utilised, as you suggest it should be, under the surface to do that scoping? Do you have any evidence of that?

Mr Lyon—Clearly my evidence is the same as you would see in the newspapers.

CHAIR—Your submission talks about penetration rates since 2007 and notes that they have slowed. You talk about, therefore, the necessity to step up technology to encourage, if you like,

saturation. On what basis do you suggest that? How do we know that consumers actually want what the government is proposing? You are saying on the one hand in your submission that demand has eased. Is the government's proposal an over delivery in a sense?

Mr Colacino—The periods of greatest growth that we have seen previously were during periods of increased competition and the provision of new services. In particular the growth that occurred between 2003 and 2007 was at the time of the entrance of new competitors at the retail market. During that period in time we saw the greatest growth. Likewise, international evidence has shown that periods of increased activity and the provision of new services indeed result in greater growth.

Senator IAN MACDONALD—Is Telstra a member of your organisation?

Mr Lyon—No, they are not.

Senator MINCHIN—When did they resign? Sorry.

Senator IAN MACDONALD—Were they?

Mr Lyon—No.

Senator IAN MACDONALD—And yet they would be the biggest infrastructure supplier in Australia at the moment, wouldn't they?

Mr Lyon—We have a range of private sector members largely focused on construction, finance and advisory functions and operators in terms of toll roads, service providers and so on, but Telstra are not members.

Senator IAN MACDONALD—Any telcos?

Mr Lyon—We had AAPT. They resigned about a year ago. We have Optus within our membership, who joined about a year ago. PowerTel were a member for a time as well. Telecommunications are not a strong focus for us beyond our interest in a policy sense.

Senator IAN MACDONALD—In your submission you have indicated that an NBN rollout 'has the potential to deliver a major productivity uplift to the national economy', with 'the potential to bring together people, ideas and knowledge in new ways', which I think everyone agrees with. But that was the underlying theme of the government's previous proposal, which was only going to cost $5 billion, as opposed to $43 billion. Why is this proposal superior to the previous proposal?

Mr Lyon—This proposal is superior because it delivers 100 megabits per second rather than around 12. That clearly is a much higher bandwidth, which means the network being delivered has a much higher capacity. The government went through a process in terms of their original national broadband plan. They made a policy determination that there was a better way forward—that is, the delivery of this superfast broadband, which is their second scheme. Again, it is something we argued for in our previous policy work in terms of national reform of markets

across telecommunications, energy, water and so on. Fibre to the premises is the way forward for Australia. Again, it is a very large project and one which needs to be very carefully managed.

Senator IAN MACDONALD—The previous proposals had fibre to the home going to 98 per cent of the population—which as a rural and regional based Senator I was pleased about, although I could never identify which was the two per cent that would not get it—but now the commitment seems to be 90 per cent. Do you have a view on that?

Mr Lyon—I do not think the original proposal was fibre to the home for 98 per cent of people. I think it was to reach 98 per cent of people, with part of it to be delivered by a wi-fi network.

Senator IAN MACDONALD—So what is the current proposal then?

Mr Colacino—The original commitment was for a 98 per cent coverage rate with fibre to the node, with the existing copper network to the premises to be utilised for the 'last mile', as I believe it is called.

Senator IAN MACDONALD—So the same as the OPEL proposal, more or less.

Mr Lyon—OPEL was the rural and regional wireless end of it. This is talking about actually delivering fibre to the premises for people's homes. The original was fibre to the node, which is the box which sits—

Senator IAN MACDONALD—But the main difference, you are saying, is you can get 100 megabits per second instead of 12. Telstra and Optus can provide that now, can't they?

Mr Lyon—What we talking about here is delivering 100 megabits per second to 90 per cent of the population. That is well beyond the reach of current networks, going out into some of the underserviced areas which Senator Fisher mentioned earlier. It is a policy decision the government have made to extend the reach of this much higher speed network. Provided it can be delivered efficiently and responsibly, provided the risks can be managed and provided it fits within the broader directions of government and the capacities of government, then it is a sound way forward. It is world's best practice.

Senator IAN MACDONALD—As a group that is vitally interested in infrastructure generally, do you have concern that this $43 billion is on top of lots of other borrowings that some say could reach more than $300 billion? Then, of course, you have worries about interest rate rises and perhaps tax rises to pay off debt, which then, of course, impact upon the ability of your members to raise funds. Senator Minchin was asking along the same lines. Looking into not next year but the five- to 10-year period, are you concerned that borrowing $43 billion for this, added on to others, is going to impact upon your members' ability to raise funds in the future?

Mr Lyon—We are focused on the view that it is not an either/or proposition between an NBN and delivering economic infrastructure, which I think is at the heart of your question—are we worried about whether other infrastructure can be delivered? Of course, we have very strong focus on the backlog of infrastructure. We recently released a major report into—

Senator IAN MACDONALD—From your own members' point of view, they have to get money in the market. I think you said the market was good for $600 million or something.

Mr Lyon—At this point in time, around that.

Senator IAN MACDONALD—Somewhere Australia has to get $308 billion, or some say that—and that is 'billion'. Aren't your members slightly concerned that, if they are out there competing, it can only put up prices, which is going to make their future business operations a bit less certain?

Mr Lyon—None of our members have expressed the concern that they will be crowded out of markets by the national broadband network. All of our members are concerned about the current capacities of debt markets, but we are very hopeful that they will recover. There is also a potential that if this project is structured well when it comes to an execution stage that it may provide a reasonable investment proposition for superannuation funds. We have around $1.1 trillion in retirement savings in Australia at the moment, and funds are naturally looking for long-term sustainable and stable returns.

Senator IAN MACDONALD—All right. The chair is urging me to finish, which I will. Are you being consulted on the new proposal, which still seems to be very vague? You are hoping it will be, I think you said, 'structured properly'. Is your organisation being consulted about what the proper structure is?

Mr Lyon—We have not been consulted to date, Senator. Certainly the government are tendering at the moment for their financial advisers, their technical advisers and so on. We will continue to seek to work with the government and with the parliament to make sure that this is—

Senator IAN MACDONALD—Will any of your members be tendering for those positions?

Mr Lyon—Of course. We have large accounting practices with large advisory functions as members, so of course a range of them will be—

Senator IAN MACDONALD—So that might be the quid pro quo. It should be very good for your members who happen to be lucky enough to get the nod on the tenders.

Mr Lyon—Of course. We are talking about an infrastructure project which is going to deliver, presumably, a cable to large portions of the country. It is therefore logical and not surprising that a large portion of our membership, or sections of our membership, will have an interest in tendering for various components of the work. It will need to be designed, it will need to be financed and it will need to be built, and we represent those disciplines in the national infrastructure sector. So, yes, our membership does have a strong and direct commercial interest in development of a project of this scale.

CHAIR—Thank you very much, Mr Lyon and Mr Colacino. The committee will take a short break.

Mr Lyon—Thank you.

CHAIR—The committee will resume at 10.50 am for a short private meeting.

Proceedings suspended from 10.37 am to 11.02 am

GILMORE, Dr Rowan, Chief Executive Officer, Australian Institute for Commercialisation

NESS, Dr John, Chairman, EM Solutions

CHAIR—Welcome to the witnesses from the Australian Institute for Commercialisation. The proceedings of the select committee inquiring into the National Broadband Network are public and protected by parliamentary privilege. It is an offence and potentially in contempt of the Senate for a third party to attempt to interfere with evidence that would otherwise be given to a witness as indeed it is for a witness to give false or misleading testimony. If at any stage you want to provide your evidence in private, please request that and the committee will consider your request.

Dr Gilmore—I also appear as a board member of a small Australian manufacturer of telecommunications equipment, EM Solutions.

Dr Ness—I am not associated with the Institute for Commercialisation.

CHAIR—Thank you for that clarification. The committee has a submission from the Institute for Commercialisation. Do you wish to make any corrections or amendments to that?

Dr Gilmore—No corrections.

CHAIR—In that case would you like to make a brief opening statement?

Dr Gilmore—Our submission related to the terms of reference of the committee, particularly with respect to the objective to directly support up to 25,000 local jobs each year and to examine the implications for national productivity investment and economic growth. As I outlined in the submission, the AIC is a not-for-profit organisation that was established in 2002 to foster Australia's commercialisation of new technologies and new knowledge and to seek to improve its productivity through better utilisation and application of Australia's knowledge base and research base.

The innovation review of Australia was carried out by a committee established by the parliament last year. In that innovation review evidence was presented that research and development was fundamental to economic growth, that commercialisation is capable of improving the innovation stock of a country and that a commercialisation chasm exists, the chasm between research and development and translation of that R&D into the market, and a number of recommendations were made to improve the commercialisation of Australia's innovation and R&D. One of those was the role of procurement and stimulation of the demand side in order to help small Australian companies find a local base and a local market for their goods and services.

Our submission was principally to point out the opportunity that the national broadband network presented for Australian R&D and for numerous small Australian suppliers to the telecommunications market and to express the concern that the opportunity not be squandered.

As we pointed out in the paper, historically, previous initiatives in Australia basically have resulted in very limited industry development in the telecommunications industry, and it is our belief that the NBN and the spend associated with it could be, if properly managed, encouraged and directed, used to help spawn the growth of considerable new industries in Australia. The purpose of the submission was to suggest ways in which that could be done and to point out some of the mistakes made in the past, to ensure an enduring local telecommunications industry exists.

CHAIR—Thank you, Dr Gilmore. Dr Ness, do you wish to add anything?

Dr Ness—I would just make the general point that the NBN is one of those rare opportunities that come along where we have the opportunity to rebuild a solid industry base to expand our industry and either reduce our foreign debt or add to our foreign debt. It can go massively either way, depending on how it is handled.

CHAIR—Indeed. I will kick off with one question. Reading through the institute's submission, it seems to focus more on fibre to the node as opposed to fibre to the home. Is that correct? Is there a reason for that? What are your views about the deliverability of the government's commitment to deliver fibre to the home for 90 per cent of Australians?

Dr Gilmore—That evidence is based on my own personal experience of running networks around the world. Anecdotally, the demand for 100-megabit services to most homes is not necessary and would be throttled down in most instances anyway. Certainly there would be businesses in premises that would benefit from 100-megabits per second connectivity, but without having seen market data my experience would indicate that that is not necessary in the great bulk of circumstances. Although connectivity is needed, one way of providing that would be fibre to the node that could be extended to a premises or a small business if necessary, but in my experience I have never seen the need for universal broadband connectivity where universal would be in the order of 90 per cent.

CHAIR—When you suggest that 100 megabits per second is not necessarily needed, what would you say to those who might say, 'That comes from a horse and cart type view of internet technology, and once people's expectations are updated according to what can be delivered then you may indeed find the need for, for example, speeds of 100 megabits per second'?

Dr Gilmore—I would point them to the history of the 1990s, when Telstra—Telecom as it was then—rolled out ISDN. I am an engineer, and engineers tend to like to lead with technology. We like to lead the market. I distinctly remember in the late nineties there was this great big period when everyone was wondering what the killer application would be that would drive broadband utilisation. It never emerged. I point out in the submission that ISDN is a good example of a technology that was grossly underutilised, and its take-up really was substantially limited because there were no applications for it. You are suggesting that applications may emerge a decade hence, and that is quite true, but so too perhaps will new technologies. To have a legacy investment and then retrofit a legacy investment to an application that does not yet exist and spend billions of dollars to do that is, in my opinion, a risky investment.

Senator MINCHIN—Dr Gilmore, you have said both orally and in your submission that your views on this relate to your experience. Could you give us a bit of your background, and what you mean by your experience and whatever expertise you bring to bear on this?

Dr Gilmore—I am an electrical engineer with a PhD in microwave electronics. I worked in OTC and Telstra in the early nineties and then I joined a company called SITA, which is a multinational telecommunications organisation that provided the networks for the world's airlines. In pre-internet days, it basically handled all the data traffic between the airlines. I operated its networks in Australasia and then in North America and finally in Europe. My background expertise is with IP networks and in the telecommunications industry. While I was at OTC, I headed an R&D group called Advanced Global Networks. We looked at broadband networks and emerging packet technologies that preceded the internet. We looked at ways in which broadband demand could be utilised. If you remember, prior to the Sydney Olympics there was great concern that there was insufficient international capacity coming into Australia. That spawned a lot of activity to lay new cables. Subsequently, in the 2000s, after those cables were installed, companies such as Global Crossing, which invested huge amounts of dollars laying undersea fibre cables, have basically disappeared.

Senator MINCHIN—And you were with Telstra also at some stage?

Dr Gilmore—I was with OTC and then it was acquired by Telstra.

Senator MINCHIN—When it became part of Telstra?

Dr Gilmore—That is right.

Senator MINCHIN—Could you just delve into this issue of demand for high-speed internet. I am interested in your exploring that. We hear so much on this committee from the experts who say there will be all these magnificent applications in the future which will mean that even 100 megabits will seem slow, so we should be talking 1,000 megabits. It is sobering to have someone with your experience say: 'Hang on a minute. Really is there going to be that sort of demand?' I must say, as background to that, that the government itself was saying in the lead-up to the election and subsequently that having 12 megabits to 98 per cent of the population was going to be terrific and set us up for the future. Suddenly that is passe and we have to have 100. I am interested in a bit more information as to why you think projections of demand for such high speeds are ill founded.

Dr Gilmore—I concede that in regional and rural areas the lack of broadband access for small businesses is a hindrance to economic growth. I hear that all the time, because our constituency is not just capital cities; it is entrepreneurs and small businesses throughout Australia. However, I guess the question comes down to: at the customers' premises, what is the end need for large data rates? If you look at high-definition TV on massive screens, that potentially would consume perhaps 10 megabits per second for high-definition type access. If a customer wants multiple videoconferences going on at once in high definition, conceivably one could get up to 100 megabits per second, but for a residential domestic consumer it is difficult to see that happening today, short of technologies like three-dimensional movies and those futuristic-type applications.

Maybe 10 years hence one would be termed a Luddite for not foreseeing those applications. I remember in 1992 or 1993 people were looking for applications that would drive huge broadband traffic. People spoke about telemedicine and the need for high-detailed x-rays. Those technologies are available today and we are still waiting. High-definition TV is, without doubt, the greatest consumer of bandwidth and need for throughput that I can see. Correct me if I am wrong, John.

Dr Ness—Humans can only drink so much water and your brain can take in only so much data, so you are limited by four million years of evolution. There is no point in feeding in all this information to people who just cannot process it. That is my view of it.

Senator MINCHIN—One of the problems, from the opposition's point of view, is the lack of demand analysis, cost-benefit analysis—who is going to take up these services. Is there a distinction between, in a sense, the business market—which would include hospitals, universities, et cetera—and the residential market in terms of potential demand? And is there any way, in designing telecommunications of the future, that you can, in a sense, market segment? I must say that one of the problems I have as a fiscal conservative is spending $43 billion to give everybody in metropolitan Australia 100 megabits per second. I think you are quite right: most of them will never make any use of such speeds. But obviously there will be, within that 90 per cent, a range of institutions, businesses and others who will think it is fantastic. To get the speeds to those who really can use them, exploit them and add to our productivity, have you got to have this across-the-board shotgun approach?

Dr Gilmore—Networks can certainly be engineered—and I understand that some of the other submissions point this out—so that the backbone network has 10 gigabit or 100 gigabit speeds to local exchanges, and rural and remote Australia certainly lacks that connectivity. Presumably there is unmet demand in remote centres, which could be satisfied by having a network that is engineered to be able to deliver connectivity to the local exchange. But from the local exchange there are numerous solutions to be able to reach the premises. In the domestic residential suburbs ADSL is the current technology that is used today, but if a customer demanded it, if there were 100 gigabit type connectivity at the local exchange then it could be extended by a range of technologies in the customer access network. So differentiating between the backbone network and the customer access network, which is the extension from the exchange to the premises, is one way of allowing that sort of segmentation between domestic consumers and business consumers that may have applications that need that sort of high connectivity. For example, campuses and hospitals certainly would need gigabit type connectivity, as universities do today.

Senator MINCHIN—A lot of them have it now, don't they?

Dr Gilmore—That is right.

Senator MINCHIN—The chair referred to your inclination towards the focus being on fibre to the node, so presumably you were a supporter of the government's original policy of seeking to, in a sense, upgrade existing copper network to optical fibre to the node?

Dr Gilmore—I understand there are technical difficulties with supporting the multiplexers in the node. It depends how we define 'node'—whether it is the kerb or the exchange. But certainly, from my own observations of what businesses require, there is a need for greater data

connectivity, particularly in regional and remote areas; whereas I understand that those services are not currently available.

Senator MINCHIN—But, in terms of public policy, where do you think we are going? As I think I and the chairman read you, you are saying that the appropriate approach is the government's original approach, which was to invest in a fibre-to-the-node network, not fibre to the premises. Is that a fair reflection? Did you make a submission?

Dr Gilmore—I did not make a submission on that.

Senator MINCHIN—Just a couple of things on your submission. I was intrigued by your statement at one stage: 'We have one of the best telecommunications infrastructures in the world.' Again, we do not hear too many people actually saying that.

Dr Gilmore—I hear it from Telstra all the time!

Senator MINCHIN—That is your genuine belief?

Dr Gilmore—I think that, for the size of the country and the array of services we have, we do have a very strong telecommunications infrastructure.

Dr Ness—It was certainly my belief, up until recent times. It was very reliable, it did exactly what you wanted, it was easy to access. You did not have all those annoying problems you used to have in the United States of having to go through all the different exchanges. I think Telstra built a very good network but, in the process, it also built a very good business for NEC and Ericsson and everyone else, except local industry.

Senator MINCHIN—Also, on page 4 of your submission you make the point that a lot of the cost of building this network will go into civil works, as you call it, which I can see would be frustrating for an organisation such as yours. You say:

The spending on digging up the ground, putting in concrete, inserting cables and similar civil works should be kept separate and not used to inflate the value of the project

What do you mean by that?

Dr Gilmore—I think for reporting purposes it would be interesting to know what proportion of it is actually used to generate enduring intellectual content that is reusable, rather than static one-off civil works.

Senator MINCHIN—So just in the way the project is planned and implemented there is a lot of transparency about the investment, the spend and where it is going and how it is—

Dr Gilmore—I would suggest that, from a public policy perspective, the public would be interested to know what proportion of that spend is invested in developing know-how and knowledge that is the intellectual capital of the nation rather than in the physical capital that decays.

Senator MINCHIN—Of course. You also said in your last paragraph:

There is absolutely no point in building an NBN if the pricing does not at least meet international norms.

We have not had any clarity from the government about pricing. But we are seeing one analyst today, Southern Cross Equities. Its analysis is that retail pricing would end up being at least twice what it is now. Admittedly, people will get a faster service but they will be paying probably twice what they currently pay for a broadband service. Presumably, the international norm is that you do pay more for optical fibre than you do for a copper service. If pricing under the NBN is to be twice what it currently is, will that meet your criteria?

Dr Gilmore—My experience is anecdotal. Certainly, my anecdotal experience involves running the European network for the airlines and I was a domestic subscriber to broadband. I came back to Australia in 2003 and there was a great clamour that Australia's broadband connectivity was lagging behind the rest of the world, in spite of the infrastructure being there. It was absolutely clear to me that, because of the pricing, which at the time was about two or three times what I was paying in Switzerland, and the sorts of constraints that were put on the service, it is a no-brainer why Australian take-up of domestic broadband was lagging behind the rest of the world. Pricing plans were such that you could not do anything with it unless you were prepared to pay enormous sums. Extrapolating into the future, if we were looking at a price of $150 for an unlimited broadband service to a residential consumer, I do not know anyone who would buy that service. Small business might. As a small business we certainly would, but not as a household.

Senator MINCHIN—Thank you.

Senator IAN MACDONALD—You said that your organisation thought that there should be a pilot program for the NBN before it got underway on a nation-wide basis. Would you think that the Tasmanian proposal would be a reasonable test project? Would that fit within what you think would be appropriate?

Dr Gilmore—It depends on the objectives. I must confess, I have not updated myself on the objectives of the Tasmanian pilot. Are the objectives purely to test the market or are they to test industry involvement or test the technology? Perhaps it is all three. There is a risk if it is all three. It is quite easy to test the market and the technology and claim to test local industry involvement but, in doing so, not create any enduring intellectual capital or any collaborations or participation between small businesses. It could in the end be pre-established, if you like, to participate in the major infrastructure spend. Certainly the evidence for EM Solutions—and John might want to comment on his involvement—as a manufacturer of microwave and RF links, and it is probably Australia's premier producer, is that it has been singularly unsuccessful in accessing tier 1 telcos.

Dr Ness—It is a difficult thing to break into a well-established market that has been going on for 50 or more years. You can understand that from Telstra's point of view—very conservative—they do not want to use anyone who is not part of an established supplier network. Of course, to make their life easier, they go for single supply agreements, where they will appoint something like Ericsson or NEC and then it is virtually impossible to sell to them unless you have a product that is not in the NEC, Ericsson or Siemens portfolios. That is not a good way to develop IP

outside of the main multinationals. There are ways around it. The most outstanding example in the area of technology is Interscan, going back 30 or so years, where IP started in the department of transport and CSIRO. It never actually resulted in landing systems for planes but it did spawn a whole network of antenna and other companies. None of them have got much above the $100 million mark, but for the sum of them there is something like $250 million turnover in this country.

Senator IAN MACDONALD—Just getting back to the pilot program, what would you think would be an appropriate pilot program? What did you have in mind?

Dr Ness—Personally, I would think you would have to cover something in the order of 100,000 people in a small town and a somewhat larger regional town to get some idea of the different dynamics. It would be rather risky to get into this whole network without some solid evidence of what people would want. My view is that there would be a huge asymmetry in the residential user compared to the business user. For the business user there might be roughly the same amount of data going both ways; for a residential property there would be a lot more data coming in than going out. I think these ideas should be tested. It is always good to do cost benefit analyses, but from an engineer's point of view cost benefit analyses can often be sabotaged by the economist as reasons to do nothing. I would be much more in favour of an actual experiment as proposed in Tasmania.

Senator IAN MACDONALD—This is a difficult question, but do you have any idea of the cost of 100,000 pilot program? Would you care to take an informed guess? Would you be looking at hundreds of millions of dollars?

Dr Ness—It would depend on the infrastructure there. It probably would be hundreds of millions of dollars if you had to lay all the fibre. I did seek some information on those costs from a person I know who was involved in that, but unfortunately he is overseas and did not respond in time. He could have given me more information on the actual cost of doing that.

Dr Gilmore—I would think the capital budget would be of that order—probably at least $100 million.

Senator IAN MACDONALD—Dr Ness, with what you know of the Tasmanian proposal, would that be a reasonable—

Dr Ness—I think it would be a reasonable attempt, provided the aims are set out clearly as to what they are trying to do and it is all kept open.

Senator IAN MACDONALD—Thank you.

CHAIR—Thank you very much, Dr Gilmore and Dr Ness.

[11.31 am]

COSGRAVE, Mr Michael, General Manager, Communications Group, Australian Competition and Consumer Commission

HOME, Mr Richard, General Manager, Strategic Analysis and Development Branch, Australian Competition and Consumer Commission

PEARSON, Mr Mark, Executive General Manager, Regulatory Affairs Division, Australian Competition and Consumer Commission

SAMUEL, Mr Graeme, Chairman, Australian Competition and Consumer Commission

WILLETT, Mr Edward, Commissioner, Australian Competition and Consumer Commission

CHAIR—Welcome. I presume that the representatives from the ACCC are very well aware of the rules and regulations governing inquiries like this. Thank you very much for your attendance today. Would you care to make an opening statement?

Mr Samuel—No, I think we will go straight to questions.

Senator MINCHIN—I hate to do this to you, but I would like to go back to the original, failed tender for a fibre-to-the-node network. From the ACCC's point of view, do you have any objections to the release of your report to the expert panel on that tender?

Mr Samuel—No. In fact, the bulk of the report that could be released, other than the material that is commercial in confidence, has been released as part of our submission to the Department of Broadband, Communications and the Digital Economy. That is the submission that we made on *Regulatory reform for the 21st century broadband*. Subject to confirmation from my colleagues, there is very little in the report to the expert panel that is not now set out in the submission that was made to the department in relation to the regulatory reform, other than the material that would have to be redacted—that is, the commercial-in-confidence material.

Senator MINCHIN—You refer in that document to the fact that the appendices to it were all appendices to your report to the panel.

Mr Samuel—That is right.

Senator MINCHIN—Beyond those appendices, what was the nature of the material supplied to the expert panel? It went into the issues of each individual submission, did it?

Mr Samuel—In summary form, it dealt with the material other than the appendices, which are a direct take from the appendices to the report to the export panel. The rest of the material in what is called the substantive part of the report went into an analysis of the tenders in terms of

competition and then contained one or two broad overview chapters, the detail of which is probably better exemplified in the appendices.

Senator MINCHIN—But, again, for the sake of completeness and subject to the blacking out of references to particular commercial-in-confidence information, you do not have a problem with your report being released from your perspective?

Mr Samuel—I think you would find it would be blackening out certain chapters which contain the material that relates to the commercial-in-confidence elements of what has been submitted by the tenderers, but other than that the rest of the material is quite open, and we would have no objection to it. It is a matter for government, but I doubt that whatever is not contained in this document that was contained in the expert panel report that we provided would elaborate much more on what is contained in the appendices that are set out in the submission.

Senator MINCHIN—That is helpful. You have not been instructed not to release it? Your position is that you provide to the panel and it is a matter for the panel/government as to what they do with it.

Mr Samuel—That is correct, yes.

Senator MINCHIN—One of the issues that the Senate must confront is that the Senate has passed a resolution that it will not deal with any NBN related legislation until the government tables both the expert panel report and your submission to it. That is why this is a continuing matter of interest to us. As I understand it, from what you are saying and from looking at your appendices, your report does not go to this issue of the viability or otherwise of a fibre-to-the-node network. For those of us who are struggling in the absence of the expert panel's report—all we got was a very brief extract and government statements—the reason that the government seems to have abandoned that original tender was the compensation cost to Telstra—this argument: oh, well, there's $20 billion worth of copper that would have to be compensated for and that just makes the whole thing unviable—and so we moved on to fibre to the premises. But your report to the panel would not have gone to that issue, presumably.

Mr Samuel—No, it did not. That was not within our remit. Our remit was to analyse the issues of competition and the competitive elements of the submissions that had been made in respect of the proposal of request for tender, and so we did that, but not to go into the economic viability of the fibre-to-the-node network. That was a matter for the expert panel and other advisers to them.

Senator MINCHIN—Yes. From our perspective, it would appear that the original policy of a fibre-to-the-node network could in practical terms in a sense only be done by Telstra. It was originally a Telstra proposal to upgrade their network to fibre to the node. I do not need your comment on that one way or the other, but that is the background. In a sense the government admitted it by saying, 'Oh, well, if anybody other than Telstra did it there would be $20 billion of compensation, so it is pointless to go down that path. We might as well put the $20 billion that we would otherwise have to spend on compensation into rolling out fibre to the premises.' It goes to this question: it was only ever realistic to contemplate Telstra being the architects of a fibre to-the-node network. But it just reminds me—

Mr Samuel—Do you want me to respond on that particular issue?

Senator MINCHIN—If you wish to respond to that.

Mr Samuel—I know that that was, if you like, the accepted wisdom, particularly amongst media commentators and others. I am not sure that that is entirely correct. This goes back to some issues and some discussions and communications we had with Telstra that preceded this particular tender process. We need to remember this: one way or another Telstra was indicating—whether it had a right to do so or not is another matter—from as early as 2005 that it was entitled to some 'compensation or payment' in respect of its copper network. In the event that a competing tenderer was to roll out a fibre-to-the-node network, then Telstra was suggesting—and I have to say 'suggesting' that, because it was coming through various means indirectly through the media and comments being made by Dr Burgess and others—that if another tenderer were awarded the right to roll out the FTTN then a compensation was payable to Telstra in respect of the copper lines.

Equally I think it is fair to say that it was certainly our impression that it was Telstra's belief that, if it were to roll out the fibre-to-the-node network, it would expect to be paid for the use of its copper lines. But that payment would have been one not paid by another tenderer and then passed through to consumers; it would have been a charge directly imposed on consumers. That reflects that some of the charges that were suggested by Telstra might be payable by consumers if it were to roll out a fibre-to-the-node network.

Mr Willett—Just to add to that: that is the reason it was not really at the forefront of our minds, because we knew that there was a pricing issue for the remainder of the infrastructure that was going to be used by the FTTN proposals, regardless of whether Telstra was the proponent or someone else was the proponent. That does not mean it was an easy issue. This was a key issue in whoever built the infrastructure. It was not one that was going to be easily resolved, but it was an issue for any proposal. From our point of view, the valuation should be the same whether Telstra uses it for itself or whether another proponent uses the infrastructure.

Mr Samuel—If you were to go back through public comments made by the proponents of the G9 network—which is going well before the current government's request for proposals—they suggested that, if compensation was properly payable to Telstra, then that would be an add-on to the charges that they had set out in their proposed undertaking that was put by FANOC to the ACCC and would simply be passed through to consumers. What Telstra I think was suggesting was, 'If we roll out the fibre-to-the-node network, we'll impose the same costs; we'll simply pass them straight through to consumers.' So, either way—whether Telstra rolled it out or whether it was FANOC, G9 or whoever—Telstra's proposition was that, one way or another, consumers were going to pay for the use of their copper network. It would not have made any difference whether it was Telstra or someone else.

Senator MINCHIN—I do not want to drag you into the weeds of what happened in 2005, but was that one of the major sticking points as to why Telstra and the ACCC could not come to agreement on the basis on which Telstra might at that point have proceeded with its upgrade?

Mr Samuel—You are dragging us back to some interesting analysis and discussions. I am reminded, having recently read Paul Fletcher's book, of some of the discussions that took place

through that time. It is a very good account actually. I recall, with some fond and not-fond memories, Dr Burgess's comment in June 2005 that we were 98 per cent of the way there. The problem was that the other two per cent was a fully locked door with a lost key, and Telstra knew the whereabouts of the key. So I do not think that we were close at all. The problem was this: Telstra had views on its pricing; it also had views on other aspects of terms and conditions of access; we had not reached agreement—we were moving along the way—but in the end Telstra simply closed the door, locked it, threw away the key and said, 'We're not prepared to discuss this any further.' I do not think that we could definitively say that we even got close to a clear position where we would have been able to have put out even to the public arena for examination the pricing proposals that Telstra was putting to us back in May-June 2005.

Mr Willett—It is fair to say that probably the most contentious issue that we have had in recent times between us and Telstra has been the valuation of the raw copper for the provision of unconditioned local loop services and line-sharing services. Of course, any fibre-to-the-node network would use part of that copper, so I think you can take it from that we still have not solved that issue.

Senator MINCHIN—I understand that. So the valuation of the copper was always a major sticking point.

Mr Willett—Yes.

Senator MINCHIN—On another subject, one of the interesting issues in this whole space is the issue of infrastructure competition. It is not talked about. We had an earlier witness, Mr Moore—who is still with us—who did not want to use the word 'monopoly' but spoke in terms of one provider of telecommunications infrastructure in this country. One of the unsaid things in all of this is: if the government starts rolling out an optical fibre network under the guise of a new corporation, what happens to the existing Telstra network? Is it that you foresee the possibility or likelihood that we will have competing networks? Do you see that as desirable or are you indifferent to that outcome? Are current policy settings adequate for the potential reality, which we have not had before, of significant fixed-line competition, because there is still plenty of life left in the copper, as I understand it?

Mr Samuel—There has been a lot of discussion about this in some areas of the media suggesting that it is the only way that the fibre-to-the-home NBN proposal by the government can be economically viable. This is not a matter that we have addressed our attention to because we have not been involved in the economic viability of the FTTH rollout. I think that as a matter of broad principle—and I underline the words 'broad principle'—the ACCC favours a competitive environment, whether it is in respect of fixed line, or the alternatives, which included wireless. But the extent to which that becomes an integral part of the economic viability of the fibre-to-the-home network is not a matter that we have put our minds to. We have not been involved in that analysis.

Senator MINCHIN—You have a long-standing commitment to seeing the separation of the wholesale and retail elements of Telstra and you remain committed to that. One of the Telstra arguments, and it is an argument others also put, is that, if we are going to build the NBN and it is potentially going to compete with Telstra and it is going to be there in eight years time, what is the point of going through the breakup of Telstra now, which is a process that presumably would

take some time, be quite costly, expensive and potentially legally fraught. Why on balance do you believe that it is nevertheless important to pursue that course even with the advent now of the NBN, which is quite different to the previous government's proposal?

Mr Samuel—We have to go back to basics and understand that much of the debate that has particularly occurred over the last four or five years—in fact it has been occurring since the introduction of some form of competition into telecommunications—has been over the issue of regulation. There is almost a sort of a trade-off. If you want effective competition, then it is best achieved by putting in place the right structure. The default position is to try to put in place a regulatory environment—some would describe it as a regulatory straightjacket—to try to achieve the same outcome. Regulation is invariably an unsatisfactory means of achieving the outcome that could otherwise be achieved by structural means. I liken it in parallel terms to what happens in relation to mergers. Regulation seeks to impose behavioural disciples on the parties that we are seeking to involve in the competitive process, whereas structural undertaking, as we have in mergers, try to put in place a structure that creates the incentive for competition, or at least a disincentive to act in an anticompetitive process. Therefore, we take the view that if we are to try to diminish the role or regulation, with all the inherent deficiencies and disadvantages associated with regulation, the only way to do that is to proceed down the structural root, and that is structural separation.

Mr Willett—Remember that we are talking about eight years here, which is nearly as long as the—

Senator MINCHIN—Some think that is optimistic too, I would have to add.

Mr Willett—That may or may not be the case, but I think we are talking of at least eight years and that is a period that is at least comparable to the period of competition that we have had in telecommunication, so it is a very significant period. We are very conscious that we want to go into the NBN with a market that is as competitive as it can be because that will make the best use of the NBN—the more dynamic it is and the more offers that are available to people then the more attractive the taking up of broadband services over the NBN will be. If we are talking about rolling out NBN tomorrow and it being completed in one or two years then I would see the point that you are making. But we are talking eight years and the structure, the behaviour, the conduct and the competitive nature of that market are going to be pretty critical over that period. Also, it will involve some adaptation to the fact that NBN is coming in. As soon as NBN was announced, market dynamics changed. People might for example change their plans about DSLAM rollout. The regulatory environment has got to take that into account and it has got to do what it can to promote competition in that environment.

Mr Samuel—We need to recall that what I call 'behavioural regulation', which is what we have at the current time, is always subject to gaming by the incumbent. It is subject to gaming in this respect: first of all there will be gaming of the regulation, but there will also be gaming of the processes that have to be built into the regulatory process—the processes of appeal and review that are necessary elements in ensuring that there is proper administration of the regulation by the regulator.

It would be no secret that the ACCC has, in respect of the current regulation, had to deal with a whole range of appeals and reviews to the Australian Competition Tribunal—the so called

merit reviews—which ought not to take place with respect to our arbitration decisions, but do take place by referral to the Federal Court under ADJR processes. We have seen the outcome of those, not the least of which was very late last week. The operational separation regime that was introduced by the previous government, as we have been quite open in saying, just has not worked in achieving its objective, which was to try and bring about some form of incentives for equivalence of dealing in relation to wholesale access to Telstra's network. It has not worked. It has been a dud.

Senator MINCHIN—While we are on that subject, I note reports that you have extended the fixed-line declaration by five years. The report I am reading, from *CommsDay*, suggests that that is unprecedented. Could you just brief the committee on exactly what you have decided and whether that is an unusually long extension. Could you tell us the basis of this decision?

Mr Samuel—I am not sure that it is unprecedented. What we have done is to extend the declarations over those fixed-line services—and for a very good reason. We are moving into a period, now, with the potential roll-out of the NBN, and we need to ensure that during that period consistent with the regulatory regime that is currently in place we can try to encourage or bring about an environment for competition in respect of the still-retained and continued-to-operate fixed-line network. Therefore we have extended the declarations for five years, but we have also noted that, to the extent that the NBN is rolled out and starts to provide either a partial or total substitute for some of those fixed-line services, there is the capacity to relax the declaration implications by the process of either exemption or a review of those declarations. So to provide a degree of certainty through this period we have said, 'Let's declare those services or continue the declaration for a period of five years but with the ability to roll back those declarations by means of exemptions and/or review of the declaration process.'

Senator MINCHIN—*CommsDay* in its report says it is an 'unprecedented extension'. Have you never extended anything like this? Is it the five years that is unprecedented?

Mr Cosgrave—That is correct, Senator, largely because there have been issues around overlapping declarations. This is a good example of where a regulation has adapted to the announcement of the National Broadband Network. We were initially contemplating a shorter period of declaration but with the announcement and what we saw as a need for regulatory certainty during the transitional period to the NBN, we felt it was appropriate to give that regulatory certainty by providing for the maximum period allowed for under the legislation, which is five years.

Senator MINCHIN—Okay.

Mr Cosgrave—This is the maximum period allowed under the legislation. But, as Mr Samuels made clear, no-one is quite sure how things are going to develop over that period. The regulation is sufficiently flexible but if things develop in a way that someone can make a credible case that the regulation should be withdrawn then they should make that case.

Senator MINCHIN—I appreciate your interest in certainty; it think it is appropriate. Are you concerned about the real risk of a lack of investment during this transitional phase, which has an effect on competition, particularly in relation to DSLAMs? Some of the ISPs and others must be wondering about the wisdom of further investment in the existing network. Just as you are

anticipating the NBN, so will they. Is that something that is concerning you, or that you have analysed or had a look at?

Mr Willett—It is certainly an issue of interest. Let me start by distinguishing between parts of the network, because we have the access network which, by and large, the NBN is going to replace; then there is the service provider's core network. I do not see any reason why there would be any disincentive for investment in core networks other than in those areas of transmission that the NBN is going to touch on. In fact, you would expect that a development like this would be stimulatory to investment in core networks in preparation for the NBN.

The question about access networks is more difficult, and it is by no means clear, firstly, what the incentives for investment will be given that some of the payback periods on some of these investments are pretty short. It may be that there would be some chilling effect on some investments, but it is not clear that that is a bad thing. Graeme spoke a moment ago about competitive infrastructure. When you are dealing with networks that have quite distinct declining costs on utilisation, the question about what is efficient and what is desirable is quite a difficult one and it goes to questions of technical efficiency, allocative efficiency and dynamic efficiency. Some of those efficiency considerations can counteract each other. You might have a monopoly service being technically efficient but reducing allocative efficiency.

I can recall that with the debate about mobile networks in Australia, for example, there was an argument that it would be technically efficient to have just one network, or at least substantial components of the network being a monopoly service, but then of course there would be allocative and dynamic efficiencies lost through the loss of competitive infrastructure. So the balance on mobiles, I think, came out in favour of competitive networks, although we do have substantial economies of scale and you are not going to see a lot of mobile networks in Australia.

The same sorts of questions—not necessarily the same answer—are involved in the move from a copper network to an NBN, and what the right level of investment is from an efficiency perspective during that period and ultimately is a question that we do not feel competent to answer at this point and that I do not think anybody is competent to answer. We will just have to see how things play out, and if there are problems that are emerging then that will be something that government might need to address. But, for the time being, having everyone able to make whatever investments they see fit in the context of an NBN ultimately being rolled out and being able to offer whatever services they want to is probably the right answer. So, if you are not getting a clear answer on—

Senator MINCHIN—No, I understand the difficulty of your position.

Mr Willett—whether the NBN should be a monopoly or not, there are a whole lot of considerations.

Senator MINCHIN—And there are investors who have to make a judgment about their confidence or otherwise in the time frame for the NBN et cetera.

Mr Willett—That is right.

Mr Cosgrave—Those companies have had to make those judgments, really, for the last five years because the potential for an upgrade to a fibre network has been around for at least that long and people have been making their judgments. As recently as last week, I think, one company announced an intention to continue to invest in DSLAM infrastructure. Others may not, but those are the investment decisions they face against the more general environment of the potential for an upgrade to a fibre network.

Senator MINCHIN—Thanks. I wonder if you are in a position to give this committee any response to Telstra's proposals contained in their submission to the government's regulatory reform discussion paper, which I thought was a good submission from Telstra in the sense of being accommodating and conciliatory. They put up two or three quite specific proposals for public consideration. I do not know whether you have responded to them or whether you believe you are in a position to give any response to, for example, the independent technical telecommunications adjudicator that they proposed, their enhanced price-monitoring safety net et cetera. There is obviously this issue we referred to before, the regulated cost of the copper network. I think they have proposed this before, but they have incorporated again in this submission an expert assessment of the two cost models with the results being binding. Are you in any position to respond to those proposals—because they are obviously of interest to this committee as we go forward?

Mr Samuel—We are dealing with the regulatory review for the interim eight-year period. Obviously, a lot of submissions have been made to the department on that. In many respects I think it is fair to say that that is now in the lap of the department. It is a matter for the government ultimately as to the course that they follow. We put it in our submission. It is clear. It is in the document you have got. We have to leave it now up to the department and such discussions they may want to have with us in relation to the matters that we have submitted and/or that Telstra or other parties have submitted.

Senator MINCHIN—So your practice is not to comment publicly on others. Telstra's is not just any other submission of course, but your practice would be not to comment publicly on other submissions, is it?

Mr Samuel—What happens is that we get into a public debate, which is always fairly unsatisfactory, as to the merit or otherwise of matters that are in individual party's submission. That is not terribly helpful. I think it is probably better that we do it in an environment where we can address the issues in a lot more detail, and that will be if the department wants to consult us on any of those issues. Ultimately, the department has received 90 or more submissions. The department will make its own recommendations to the minister.

Senator MINCHIN—But you would expect to be consulted on submissions of that kind involving regulatory arrangements going forward, surely?

Mr Samuel—I would be surprised if we were not, but let us see how it all pans out.

CHAIR—What do you envisage will be the regulatory environment for the Tasmanian rollout and what will be the implications then for the transition to the full rollout? Are you able to comment?

Mr Samuel—Only in the sense that what we call the Tasmanian rollout is probably stage 1 of what could be a 10- or 15-stage rollout of the NBN. It happens to be the first one that will potentially occur some time this year. However, this really goes to the whole structure of the NBN or the NBN Co. I am aware obviously from public comments made by the minister, even as late as yesterday morning on the ABC, that there are a whole range of issues that the minister is examining there.

We can go back to the minister's statement made on 7 April and our clear position that the NBN Co. ought in our view be structured in a way that ensures complete structural separation from the ownership and management of the network that will be rolled out. Whether it is the stage 1 Tasmanian rollout or stage 15 or stage 20, it ought to be structurally separated from service providers. That is a two-way structural separation. Service providers ought not to have a degree of control over the ownership or management of the NBN Co. and, likewise, the NBN Co. ought not to have an interest in any service provider. That then gets us into a structural position that focuses on the discussion that I had with Senator Minchin earlier, which is the desirability of having the right structure in place rather than having to rely upon behaviour or regulation.

CHAIR—If indeed there is separation and therefore in order to facilitate greater competition you do not need so much regulation, which is part of what I understand you to be saying, then what is your perspective on the discussion over the weekend on ABC about the prospect that if Telstra were to structurally separate then shareholders of Telstra could be offered direct stakes in the NBN Co. and in the context of the minister saying that the government was prepared to consider that? What would be your perspective on that from a competition angle?

Mr Samuel—I think we are getting into discussions of policy and I have to say, as you know, we do not discuss policy matters in the public arena but more particularly I would not respond to media commentary, even by the minister, on various proposals. I am sure there are a range of issues the minister is currently considering in relation to the structure of the NBN Co. and I note that one of those was raised on the ABC *Inside Business* program. These are matters of policy. I am sure that, if the minister wants our advice on it, he will seek it in due course.

CHAIR—Going back to your proposition to Senator Minchin, I hear what you are saying but, if there were structural separation and if Telstra shareholders were then able to buy directly into the NBN Co., in order to encourage competition would there be a need for less regulation or more?

Mr Samuel—I think the proposal that Alan Kohler was putting to the minister on Sunday was along the lines of Telstra selling substantial parts of its current network into NBN Co. I think the minister indicated that a non-negotiable element was that the government would retain 51 per cent of NBN Co. and that the remaining 49 per cent might be owned by someone or a few someones. Mr Kohler was putting that proposition, 'If the purchase price payable by NBN Co. for the acquisition of Telstra assets involved shares in NBN Co., might it not be an idea that those shares rather than being owned by Telstra might actually be owned by Telstra shareholders—in other words, under an arrangement, distributed through to the Telstra shareholders?' The minister responded that that seemed like a reasonable idea that he was considering, along with a whole range of others. I would be putting on my investment banker's hat if I were to give you a view on all that, but it seemed like a rather tidy means of achieving

some form of public shareholding in NBN Co. But it is really a matter of policy for government ultimately as to how the structure is set up.

The fundamental issue that we have had a view on, and which the minister has already had a view on in terms of the 7 April 2009 statement, is that it will be complete structural separation. Our view is that that is fundamental to the way forward to create the true competitive dynamic and the competitive incentive in relation to NBN Co. and that we ought to focus on that. The mechanism by which it is achieved is ultimately something that I am sure the government and the minister are currently examining.

CHAIR—So you are not able to express a view at this stage as to whether if the scenario that you painted were to eventuate it would require less regulation, the same regulation or more regulation in order to encourage competition; is that right?

Mr Samuel—We have certainly expressed the view that if structural separation were to take place then there would be less need for behavioural regulation. We expressed that view in an appendix—I forget which appendix it was—to the submission that has gone to the regulatory review. It has consistently been our view that structural separation diminishes the need for stringent behavioural regulation, and that in itself has to be good certainly for the regulator and for those who are subject to regulation.

Senator IAN MACDONALD—In principle, what is your view about the media companies investing in the NBN Co.?

Mr Samuel—To be honest, I do not think we have examined that. I think what we need to do is focus on the structure of NBN Co. itself. Of course, Mr Kohler is not going to be putting major submissions in, I would not think, on this issue, but one of the things he suggested yesterday to the minister was that there should be a restriction on the level of shareholding by any particular party and its associates in NBN Co. I think the level of shareholding suggested by Mr Kohler was around 15 per cent. I think he is borrowing that from other legislation such as the foreign takeovers act, the financial services shareholding act, cross-media regulations and airport legislation. There is some precedent for setting that sort of a cap, but I think the fundamental issue is ensuring that service providers do not have a shareholding either on their own or of such that they can act in concert with others that would create the disincentive to provide equivalent access to all parties to the network.

Senator IAN MACDONALD—Would media ownership of part of the company have any impact on the cross-media regulations?

Mr Samuel—We are getting into a complex discussion that we participated in over the past two or three years in relation to deregulation of cross-media ownership. I need to go back to some fundamental principles that we discussed three or four years ago in this context. In relation to the media itself, we look at three elements of the media process. There is the element of distribution of media content. In the past, early this century, it was certainly the view taken by the ACCC that it was fairly fundamental that we drew a distinction in market terms between print media, newspapers, electronic media such as radio and electronic media such as television, with even a question mark over whether there was a separation between free-to-air television and pay television.

The view that we have been putting in more recent times is to suggest that those distribution channels are starting to break up in terms of the need to draw distinctions between them in market terms. The intervention of convergence and particularly of the internet is adding, potentially, many hundreds of distribution channels of media content out to consumers rather than the rather limited number of distribution channels exhibited by the ownership of radio, free-to-air television, pay television—as we currently have it structured in ownership terms—and our newspapers.

You then move back to the pipes. What we have said is that it is becoming far more important now, we think, to concentrate on ownership of the pipes and then ownership of the content that is thrust down the pipes to these various distribution channels. If the focus of the ACCC in terms of competition is heading much more towards the ownership and control of the pipes and the content that is thrust down those pipes then, clearly, we would need to examine the question of whether or not media companies were, either alone or potentially with others, taking some form of ownership and management of control of the pipes with, in this case, the pipe being the National Broadband Network.

CHAIR—Do you have a view from a competition perspective as to whether or not the NBN should be rolled in or rolled out? There are underserved areas in cities, regionally and particularly in the country. What is the competition impact of having an NBN co. focus on its delivery in those underserved areas and leaving other areas, in which there arguably already is existing private sector competition, to their own?

Mr Willett—I probably do not want to get into too much detail because that is a question of commercial viability and the economics of the rollout.

CHAIR—With clear competition implications.

Mr Willett—Indeed. There is one point, I think, that is worth making and that is that the situation here might be very different with a fibre-to-the-premises rollout than it would have been with a fibre-to-the-node rollout. Clearly, fibre to the node was replacing the existing infrastructure and the incentive was strongly on whoever proposed that rollout to roll out in the high-value areas first, which were probably already being served by digital services in some respect in any case. I think it is different for fibre to the premises because the economics might be that you target people who do not have any services at all first. So the incentive and the procompetitive outcome might be to start rolling in from the outside and service the people who do not have any digital services at the moment and who might be more willing to take up those services via an NBN. You would get more scale in that sort of exercise and the whole proposal looks more viable. So that is possible. I think that is worth noting. Perhaps Tasmania is an example of that very thing where the state that has probably the least available broadband services in terms of an access network is targeted first as the place where the network will be rolled out.

CHAIR—If that were to happen then what would be the implications for the regulatory environment and competition?

Mr Willett—I think there is a basic issue here that we can go back to which is that, as a matter of policy, our understanding of the NB network is that it will be an open-access network

to provide services on a non-discriminatory basis, assurances as to equivalence and at prices that will reflect cost. From our perspective, that is a pretty good regulatory objective as well and that is what we would want to see happening with this network. What regulatory intervention is needed to assure that is much less clear when you go into detail about if such an entity had so much ownership and they got a little bit more, what implications that would have. The bottom line is that the regulatory environment should be as intrusive as it needs to be to ensure those fundamental principles of access. At the moment we have not done any work on exactly what is needed there other than we understand what a bitstream service is and it is probably going to be the focus of access services on the NBN, but we have not done any work on what regulatory interventions are going to be needed.

CHAIR—So when do you expect you will be doing that work?

Mr Willett—I suspect we are probably going to get involved in discussions in the not-too-distant future but they have not been triggered as yet.

CHAIR—Can you be any more expansive?

Mr Willett—I do not think we can be at this stage.

Mr Cosgrave—I do not think we can be. There are ongoing discussions with the government and they will be continuing.

CHAIR—Mr Samuel, you were going to volunteer an answer earlier before Mr Willett helped. Do you have anything to add?

Mr Samuel—No, I am quite happy to leave it to Mr Willett's answer—save to suggest perhaps that in the context of moving from the outside in or vice versa the issue is probably slightly diminished in its importance when the broad rollout of the fibre-to-the-premises network is brought back to 90 per cent of the population as distinct from 98 per cent. The remainder of the population is to be serviced by a wireless network. The 90 per cent that we are talking about tends to be from a more densely populated area—that is not to say that it is the CBDs but it does tend to be the more densely populated areas. Therefore the issue, in terms of commercial viability, of whether you start from the outside and come in or vice versa potentially become slightly less relevant than it might have been under an alternative.

CHAIR—Potentially, but if you take the view, as I do, that all Australians deserve equivalent access to equivalent services at equivalent prices—whether you are talking about fibre to the home or a combination of wireless and satellite for potentially that 10 per cent that are not going to get fibre to the home, however they are to be defined—then it may or may not be less relevant. Do you have a comment on that?

Mr Samuel—No, what I was suggesting though was that it might be less relevant in terms of the commercial viability issue. Because if you are dealing with areas that are, with varying degrees, more or less densely populated then the commercial viability element may become slightly less relevant—if we have focused more on the more densely populated areas of Australia than perhaps was originally being contemplated with the fibre-to-the-node network, where the remaining eight per cent was moving into far more remote areas of Australia.

CHAIR—I understand. Thank you. We will have one further question from Senator Macdonald before we wrap up.

Senator IAN MACDONALD—In your submission, you said:

… integrating the current Telco Act facilities access regime within Part XIC also has the potential to confuse the nature of rights that exist in respect to access to facilities under each Act and may not align well with the objects of the TPA.

What confusion were you talking about there?

Mr Cosgrave—The regimes that apply to access to telecommunications services, the regulated services that Senator Minchin was previously referring to, and the regime that applies to facilities such as mobile towers and—perhaps more relevantly in relation to a national broadband network—the ducts in a fixed network. They are dealt with under separate regimes at the moment. One thing that is being contemplated is whether you just simply roll in the facilities regime into the services regime. There are some complexities with that, in part because access to facilities applies to all carriers but not carriage service providers, if I recall it correctly. So there was some technical issues that said, 'Well, just hold on before you simply say that the same regime should apply to facilities; think carefully because there may be some unintended consequences.' I do not think it was anything more than that.

What we also said, though, was that access to ducts is potentially very important in relation to a national broadband network and you would want to ensure that the features of the more flexible regime that applies to services apply to ducts as well. So we think there is a need for some reform in that area, but from a technical perspective we are saying, 'Hold on before you legislate with some unintended consequences.'

Senator MINCHIN—One of the big differences between the government's original proposal and what we now have is the commitment to establish a new government business enterprise, called NBN Co., to be at least 51 per cent government owned. That may be optimistic. It depends on finding investors willing to put up $20 billion, so the government could well have considerably more equity than that, at least for some time. There is no contemplation of this entity being privatised until five years after the rollout is completed, so we are talking 2023 or 2025. That takes us back to the problem, which I find most acute, of the extraordinary conflict of interest of the government owning a business engaged in the telecommunications sector and being the ultimate regulator and policymaker in that field of activity. Is this something that is of concern to the ACCC or that the ACCC has given any thought to? Is the ACCC indifferent to the fundamental conflict of interest of the government being engaged in a commercial enterprise in this field as well as being, ultimately, the regulator?

Mr Samuel—It is not a matter that we have given any consideration to. Let me simply point out that when you have external shareholders in any enterprise then ultimately the enterprise needs to be governed by the normal principles that apply to any publicly owned enterprise under Corporations Law. What we think is essential is that we put in place a structure in the beginning that diminishes the need for behavioural regulations. If we do that then we diminish the inherent conflict that may arise if we have the government as a regulator and owner. The moment that you have part ownership of a government enterprise by members of the public, it then becomes subject to Corporations Law, and the government, whether as a major shareholder or as a

significant shareholder, is bound by the same law in terms of the way that the enterprise is managed.

Senator MINCHIN—It is probably unfair to ask you to respond, but I do think it is a major issue. I think it will become significant for you because it is about not so much the behaviour of the corporation but the behaviour of the government as the majority shareholder and the government overtly saying this is to be a commercial entity. Therefore, it has a vested interest in regulatory arrangements which maximise the commercial outcomes for an entity of which it is the majority owner. As I said, it is unfair of me to ask you to comment specifically on that, but I think it is a major concern.

Mr Samuel—The principal issue as far as we are concerned is to have settings in place at the very beginning for certainty for those that are holding shares in the organisation or that may wish to purchase shares in the organisation but, far more importantly as far as we are concerned, to provide certainty for participants in the telecommunications sector. That applies to both structural settings and behavioural regulatory settings. They need to be put in place correctly at the beginning so that there is a degree of certainty that can operate then to incentivise competition.

Senator MINCHIN—I accept that. Thanks.

CHAIR—Thank you, Mr Samuel, and everybody else from the ACCC. Thank you very much for your time today.

Proceedings suspended from 12.23 pm to 12.58 pm

DOMELOW Mr John, Board Director, Fibre to the Home Council Asia-Pacific

KELLER-TUBERG, Mr Stefan, Chair, Regulation and Policy Committee, Fibre to the Home Council Asia-Pacific

SAGLIETTI, Mr Peter Louis, Fibre to the Home Council Asia-Pacific

CHAIR—The committee welcomes the next witnesses. We look forward to a PowerPoint presentation to go with your submission. The evidence that you give, including the commentary you make as part of demonstrating your very good wares to the committee, is public and protected by parliamentary privilege. If at any stage you want to provide evidence in confidence, please indicate that to the committee and we will take your request into consideration. It is an offence for a party to attempt to interfere with evidence given by a witness to this committee and, indeed, is potentially in contempt of the Senate, as it is for a witness themselves to give false or misleading evidence to the committee. Without any further formality, I invite you to make a brief opening statement or perhaps outline how you would prefer to proceed with your presentation and your evidence today.

Mr Domelow—We would like to make just a short introduction. There will be the demonstration, followed by questions.

CHAIR—If we have questions from senators during the demonstration, I think that would serve our purposes and hopefully yours very well. In that case, please proceed with your brief opening comment.

A PowerPoint presentation was then given—

Mr Domelow—Thank you very much. The board of directors of the council have asked me to pass on their appreciation for allowing us the opportunity to appear before the Senate select committee today. Our intention is to provide a brief update to the council's submissions and undertake a show-and-tell presentation of some architecture issues that we consider important for the Senate select committee to be familiar with. We are also obviously here to provide the committee with the opportunity for us to expand on any matters in the council's submissions that the committee wishes to explore.

The FTTH, the Fibre to the Home Council Asia-Pacific, represents a range of organisations from a region that includes Australia's major trading partners, many who are leading the world in the rollout of fibre-optic networks that deliver high-speed broadband, 100 megabytes per second, to a rapidly increasing number of businesses and homes within their respective countries. The latest data issued by the Fibre to the Home Council APAC in May 2009 indicates that FTTP, fibre-to-the-premises penetration for South Korea is at over 45 per cent, Hong Kong is at over 30 per cent, Japan is at just less than 30 per cent and China is at approximately two per cent. In China, two per cent represents nearly 26 million people. Australia is yet to register on this table. In information that has recently come to hand, the council understands that China's five-year plan—2007 to 2012—states that China is to reduce investment in copper by 25 per cent year on year as from 2007 and that by the end of 2012 they will have completed planning for the rollout

of fibre to the premises across China. From that point on it is highly likely that China will be providing high-speed connectivity to an ever increasing number of their population.

It is well argued that Australia must continue its successful building of trade with our Asia-Pacific neighbours. Over the past 100 years or so, considerable money has been invested in seaports and airports in order to facilitate the development of trade. Of course, one of the now very important markets that both these infrastructure facilities spawned is personal tourism. Economies around the world had to follow suit to participate in the economic benefits that these facilities brought to the world. FTTP is no different. It is likely to play as much an important part in the development of the Australian community as ocean ports and airports. To what extent Australia embraces this new potential source of trade will be totally dependent upon whether fibre to the premises is adopted and to what extent it is made available to all. Australians today would not have the same quality of life if the initiative to build ocean ports and airports had not been taken. For the sake of the quality of life of the next generations of Australians, our children and their children, the Fibre to the Home Council Asia-Pacific strongly supports the Australian NBN initiative.

It is worth noting that in a presentation at the 2008 Fibre to the Home Conference in Europe, Paris, by France's Minister of Economic Affairs, Industry and Employment, Ms Christine Lagarde stated that the potential in France is for ICT to add 0.5 per cent to GDP. There is expectation in Malaysia that fibre to the home will have a significant impact on GDP. I quote Telekom Malaysia:

> The High-Speed Broadband ... project is expected to boost the national gross domestic product by 0.6 percent and create 100,000 jobs by 2017.

The FTTH council sees many reasons for supporting the NBN, as is pointed out in our last three submissions. In addition, we believe that it will be of great benefit in this forum to provide the committee with some hands-on experience with regard to some of the architecture options that may be considered. I will ask Stefan to handle the next part of our presentation to the committee.

Mr Keller-Tuberg—I would like to open up by talking about some of the elements of an access network that we think the committee should be familiar with. We have brought along many samples, which we will pass around the room or which you have up there already. The samples that we have brought along are representative of the kinds of equipment and devices that would be found in a fibre-to-the-premise deployment. We certainly are not trying to represent any particular companies or any particular product. The samples that we have brought today are representative of the class of equipment that you would normally build a fibre-to-the-premise network from.

I will start by pointing out some of these elements and drawing attention to the kinds of premise that a fibre-to-the-premise network serves. You will see that we have homes, commercial businesses and larger institutions—hospitals, schools, government buildings. Some of the premises may be apartment blocks or multidwelling units. These are all the kinds of premise that normally come to mind when we think of fibre to the premise, but we want to highlight that there are other kinds of premise as well. In many markets where FTTP is being deployed, the fibre is being reticulated to base stations for mobile services, wireless broadband services and the like, and we consider those to be premises. Likewise, FTTP or fibre is being

deployed to traffic lights and other environmental sensors, so really the applicability of the FTTP architecture extends throughout society and it is certainly not a residential or a commercial technology.

That brings me to the second element of the fibre-to-the-premise rollout—the fibres themselves. The fibre technology is, we believe, the most capable fixed-access network technology available in the market today and is likely to remain that way for a long period of time. It simultaneously can serve the needs of the largest corporations—research institutions, government enterprises and so forth—and serve the more modest needs of private residential consumers. The same network can simultaneously serve these needs even when they are co-located side by side as next-door neighbours.

The next important element of the fibre-to-the-premise architecture that I want to highlight is the FTTP modems. Sometimes you will hear these referred to as optical network terminations or optical network units. It is easiest to contemplate these as being the equivalent of a DSL modem. I have got several samples with me today, which I will talk about in a moment. They have many different capabilities and they serve many different needs. I will talk about their features shortly.

The last element I wanted to discuss is this localised exchange. Often when we speak about exchanges we think of telephone exchanges. There is certainly no technical reason that the fibre-to-the-premise network should not hub itself on existing telephone exchanges as the locations where equipment is installed. However, we use the term really to mean the first point within the network where active equipment can be deployed. These localised exchanges, as we have drawn them, could be as close to the consumers as a few hundred metres. They could be installed in the basements of apartment buildings or they could be installed in street-side cabinets or some other facility within communities. They certainly can be installed in existing telephone exchanges. Also, the capacity of fibre for transmitting over distances allows these localised exchanges to be much further away. So it is certainly technically feasible to reach consumers as distant as 60 kilometres from a localised exchange. So we anticipate there will be a range of different deployment options to be considered by the NBN Co. as they contemplate the rollout of FTTH.

I would like to focus in my part of the talk on what you might expect to see at the home and some of the issues that may arise. I would like to start by saying that in our various submissions to the department of broadband and to the Senate select committee we have tried to make a point that the investment in advanced broadband infrastructure is in itself only part of a story. In order to understand and comprehend the value of an investment in advanced broadband infrastructure, regardless of whether it is fibre to the premise, wireless, DSL or fibre to the node, you really need to contemplate the applications that run over that infrastructure. Until applications are implemented and delivered, there is no value in the investment. The value to society is entirely in the way the network is used. So the council finds it very encouraging that the government has identified several key applications, and we support them on that—applications such as smart grids, e-health and as tele-education.

We would like to add that we expect other applications to emerge, such as security applications and others. We are probably not the best to predict what they will all be, but based on our experience the applications will emerge during the life of these assets. It is important to comprehend the value of those applications in understanding the value of the FTTP investment. So we asked ourselves why some of these applications have not emerged in today's network—

applications like smart grids, e-health and e-security, for example. We have contemplated that today's first generation broadband deployments may not typically provide the kinds of capability that those applications providers—of e-health, smart grids and so on—require of a broadband network. That being the case, we can look to the deployment of existing fibre-to-the-premise networks to understand whether there is an issue there or not.

Australia currently has some fibre-to-the-premise deployments that have been taking place over the last, let's say, five years, and in those deployments we have yet to see a dramatic take-up or trialling of smart grids, e-health and other advanced applications. The council believes that the likely reason for this is that today's fibre-to-the-premise deployments are aimed at emulating today's first generation broadband deployments. Fibre to the premise, we would like to assert, as a technology has far greater capabilities than today's internet access services alone, and therein lies the key to unlocking some of the capabilities of these new applications—in deploying the network, configuring it and managing it in such a way that the needs of the application providers and the applications that are yet to emerge can be met fully. So we think it is important that the Senate consider the kind of broadband environment in the future that we need to enable these kinds of applications.

With that as an introduction, I have outlined in the slide I am showing a number of different devices that one might expect to see in a fibre-to-the-premise enabled home. Of course, there will be today's existing telephony and internet access type devices, but in addition to that there may be some security applications that allow, in a very innovative way, for security providers to offer new kinds of capabilities to the private and public sectors. Pay television is certainly one application that is frequently spoken about, but it is certainly not the only application that one might expect to see. A medical application, an e-health application, in the home could be quite an interesting application of fibre-to-the-premise technology and could bring public benefits for the health system and improve patient outcomes. We expect homes of the future to contain many more broadband devices than current homes. To that end, we expect that consumers will have a range of different needs, and the fibre-to-the-premise technology that will be deployed in the home will have many different capabilities.

May I start by introducing the first fibre-to-the-premise modem. This is probably the most simplistic of the examples that I have today. It provides two broadband data connections. Each of those data connections is capable of up to 1,000 megabits per second, and they provide independent connectivity to the network. You can see that the device is very similar in size to a DSL modem, which you may be familiar with. The point I would like to make in relation to a DSL modem is that this kind of fibre-to-the-premise modem is far more capable because it is able to support all of these potential applications simultaneously without degradation from one application to another if they are being used at the same time.

The second modem that I would like to show you is very similar in size to the one going around the room at the moment. This one includes two telephony ports as well as the data ports for a broadband service. This higher capability modem is able to very visibly support new services that are not typically supported on a DSL service today. The telephony services available on this fibre-to-the-premises modem we anticipate to be indistinguishable from the telephony services available from today's telephone network. For some consumers the quality of the service delivered through the FTTP network could indeed be superior to the service available to them through the traditional twisted pair network, simply because the traditional twisted pair

network spans great distances and the fibre-to-the-premises technology allows services to be delivered without degradation over much larger distances.

Going up the scale of device, I have yet another fibre-to-the-premises modem. You will see that it is larger. It has four broadband data connections, some connections for independent telephony services and a dongle hanging off the bottom which is a coaxial cable for a pay television service. All of these services can be simultaneously delivered and available on the fibre-to-the-premises network with equivalent or better quality than available on today's networks.

The last of the fibre-to-the-premises modems that I will show you today is a somewhat larger and different-looking device. This particular modem is designed to go on the outside of premises. It is temperature hardened, it can be rained on and it is certainly more secure than the indoor type modems. This particular device also supports many telephone services, broadband data services and a pay television service, if it was to be offered. These are the four devices I have brought today, and you can take it as read that there are many different permutations from many different vendors of this kind of equipment to satisfy the many potential different needs that might arise in the marketplace.

CHAIR—How many of those outside boxes do you foresee being used? Are there any restrictions on where they need to be put, and what does it look like on the outside of a building? If you are going to answer that in the course of your presentation, wait until you get there.

Mr Keller-Tuberg—I will get to that in a moment. The other point that perhaps the Senate committee should be aware of about the implication of FTTP in the house is the power supply aspect of an FTTP service. I have brought a couple of examples of power supplies, one of which looks like a laptop power supply. It connects to the 240-volt mains and provides sufficient power for the modem. The implication of powering from the mains is that, if there is a blackout or some problem with the power of the mains, then the FTTP service could be interrupted. To address that risk, if a particular consumer requires continuous connection to the FTTP, there are a range of different battery backed supplies that would be commonly deployed. I have an example of a battery backed supply which I believe provides backup facilities for eight hours of power blackout. You can imagine that there are various ranges of these available with various capacities.

For consumers that require contiguous connection of a telephone service or contiguous connection of a medical service at home requiring telemetric connectivity back to the hospital or so forth, the consumer would typically deploy a battery backed supply in conjunction with the FTTP service. This is quite a heavy thing—I will pass it around in a moment—but the majority of the weight is in the battery itself. The supplies could, as an example, be deployed without the battery, allowing consumers to make the choice whether they install a battery or not. The implication is that once the battery is there and installed there is some maintenance to be done on an ongoing basis. I guess you could imagine that as being a similar sort of responsibility to maintaining the battery in an alarm panel if you have an alarm service at home. It has a similar sort of battery that needs to be maintained.

The council does not have a strong position on which type of power supply should be deployed, but potentially we would ask the government to consider the environmental impacts of

deploying lead acid batteries in every residence. It is certainly important and perhaps it is best left for consumers to make an informed choice whether they require battery backup or not, noting that today most consumers have cordless telephones that are mains powered and the service is disrupted every time there is a blackout. Consumers are aware already of the implications of battery backup or not.

Senator MINCHIN—The power in here is the modem. Is that the only thing that requires mains power?

Mr Keller-Tuberg—That is right. To expand on that, integral within the modem are several algorithms that optimise the life of the battery. So when power is lost the modem may, for example, turn off access to the broadband network to maintain connectivity for the telephone service. Or it may disrupt the pay television service to reserve power for the longest possible time for the telephone service. These kinds of capabilities are generally configurable or can be designed into the devices to manage the circumstances as appropriate.

Senator MINCHIN—Are you saying that telephony over optical fibre will require mains power to be functional?

Mr Keller-Tuberg—All services over optical fibre will require mains power. Even telephone services require mains power.

Senator MINCHIN—That is a big difference that I certainly was not aware of.

Mr Keller-Tuberg—The difference is where the power is sourced. In today's telephone network and in today's pay television network, power is also sourced from the mains. However, in a telephone network the power is injected at the telephone exchange or in a cabinet, and in a pay television network the power is injected on a telegraph pole, typically, or in a small cabinet in the community. For a fibre-to-the-premises network the power is generally injected at the consumer's premises. There are all sorts of engineering solutions, but that is the typically-deployed solution—which may be apparent from the next slide.

To answer Senator Fisher's earlier question, this is what an outdoor fibre-to-the premises modem would look like installed on the side of a premise. There are several options, and there are examples of both options throughout the world. In this case, the modem device is bolted directly to the external face of a home, in a convenient place where it can be accessible from the street or wherever the fibre comes to the premise. It is exposed to the weather, so the enclosure needs to protect the internal electronics from the elements.

Another way these kinds of devices can be deployed on the outside of the home is in a combined utilities enclosure. In this case it is a meter box—something that is familiar to Australians. It has been partitioned so that the fibre-to-the-premises modem can be installed down below. In this case the meter box has a power point installed in it, and you would expect the power supply to be installed in that part of the meter box.

There are engineering and business case trade-offs that need to take place in deciding whether a consumer has an indoor installation or an external installation. One of those trade-offs is simply ease of access by the utility that is providing the fibre-to-the premises service. If the

devices are on the external face of the home, they do not need to make arrangements with the premises owner to get into the premises to service the equipment if there is a fault or if some servicing is required.

However, one of the disadvantages of putting a battery, at the very least, on the outside of the house is that the life of the battery is reduced because it is exposed to the elements—it gets hot and cold in summer and winter—so there is often a trade-off that needs to take place about whether the battery is installed inside or outside, knowing that if it is inside then it will last longer and there is a lower environmental footprint for maintaining and managing those batteries.

CHAIR—Are there security issues with exterior?

Mr Keller-Tuberg—I think that that question can be approached in a similar way to how you can approach the understanding of security issues for meters. In this case, we have a meter in a meter box. The meter boxes for electricity that we are all familiar with generally have a lock and key facility if the homeowner believes that they need to have that sort of security, and you can do the same sort of thing with the FTTP modem. You will see at the base—you probably did not notice this—that there is a facility there to install a lock and key or some sort of tamper-proof—

Mr Saglietti—Seal.

Mr Keller-Tuberg—seal, and if you open the FTTP modem then there is also an internal security. If the homeowner gets access to at least the outside part of the shell, there is an additional security or seal to prevent the homeowner getting access to the internal electronics if that were perceived to be a risk.

CHAIR—Perhaps I will ask my question in another way: is there any incentive for a third party to access it? Why would somebody want to? You may say there is no purpose in it.

Mr Keller-Tuberg—True. I guess I can answer that question from the perspective of what might happen if a third party accessed it rather than trying to contemplate what the incentives would be. If a third party accessed it, they could certainly disconnect the broadband connection and they could disconnect the telephone connection. It is possible that, if they had a laptop with them, they could connect their own laptop and somehow steal service. In just the same way, a third party could open a meter box and turn the hot water system off or turn the circuits of the house off. It is not anticipated to be a common problem, but it could be a nuisance in some cases. Normally that is dealt with by putting a lock and key on the outside of the combined utilities enclosure.

Senator MINCHIN—Just while you are on it, that rather large modem in that picture is one that incorporates a battery, is it? Is that why that is so big?

Mr Keller-Tuberg—No. This modem here is not exactly the same modem as the one I have passed around the room, but it is within millimetres of the same size.

Senator MINCHIN—But that would incorporate a battery, would it?

Mr Keller-Tuberg—No, the battery would be incorporated in a separate container, like the beige-grey power supply there that I passed around. You could install the battery, in this case, in that part of the meter box—there is plenty of space—or you could install it within the home, where you have access to it and where it is not exposed to temperature variation, or indeed you can deploy that kind of power supply in either location as well. So there are a number of options that, I guess, the utilities and the homeowners will come across when they choose to connect to the fibre-to-the-premises network. That concludes the section of the show and tell that I was going to run; I will hand over to Peter.

Mr Saglietti—Thank you, Stefan.

Senator MINCHIN—You used the expression 'choose to connect'. Presumably everybody is going to be connected whether they like it or not; it is a question of whether they fire it up, I suppose, for want of a better expression.

Mr Keller-Tuberg—The rollout and the profile of the way consumers connect to the FTTP network for the NBN, I guess, is a decision that the NBN Co. can make of its own accord. There are many examples in the world of an opt-in connectivity structure where the fibre rolls past the community and the consumers choose to connect. There are equally good examples of deployments where the fibre rolls through the community and is mandatorily connected to the consumer's premises, and they are then migrated from the old telephone, DSL, HFC and pay television networks on to the fibre-to-the-premises network at that time; they have no choice. So either approach or both approaches could be adopted in Australia, and the choice between them is not really a technical matter to be chosen; it is a policy matter.

Senator MINCHIN—But it is a decision you have to make in designing this as to whether you just connect everybody up anyway or have an opt-in to whatever is going down in your street.

Mr Keller-Tuberg—Yes, indeed. In its earlier submission, the council made a couple of comments on this point. It seems inevitable to us that in the fullness of time all consumers will be connected to the fibre-to-the-premise network. There is no question in our minds. It is not a matter of if but a matter of when all consumers will be connected. It is entirely feasible that they will be connected on day one as the fibre-to-the-premise network rolls past their homes. It may be implemented in such a way that they are connected in an opt-in manner. The advantage of connecting them all on day one is that as the fibre-to-the-premise network is available to a consumer to force them to be connected maximises the consumer base on the fibre-to-the-premise network. It immediately gives all consumers access to the capabilities of fibre to the premise. As indicated earlier on, the capabilities of a fibre-to-the-premise broadband deployment are substantially greater than the capabilities of a typical broadband deployment. That in itself could be very attractive for application developers, which we believe are critically important for the ongoing development of fibre to the premise.

The application developers having access to the largest possible market at the earliest possible time will likely create a greater incentive to invest, to take the risks to develop those applications and to experiment amongst themselves and see what works in the Australian market. If fibre to the premise remains an opt-in option, and competition is vigorous between the various different types of infrastructure, it is possible to contemplate that fibre-to-the-premise deployment and

expansion will be stifled in some respect because the application developers will not have the incentive to take that risk and develop applications. Again, when I talk about applications, I am talking about a far greater, in my mind, market than the market for internet access alone. I am talking about health services, education, security, smart grid and the kinds of services that the government has articulated.

CHAIR—Mr Saglietti, I think you are chomping at the bit to do your part of the demonstration. Can you talk about the batteries?

Mr Saglietti—Yes.

CHAIR—The question is: the battery in relative terms is pretty darn heavy. We hear you in terms of the choice that consumers have open to them as to battery or electricity et cetera. But what sort of analysis has been done of the carbon miles of a battery like that?

Senator MINCHIN—The what?

CHAIR—The carbon miles. If the majority of consumers were to opt, for example, for a battery as opposed to electricity, has anyone done any thinking about the carbon miles that go into that battery, its production and ultimately its disposal at the end of its life, which of course will be shortened if it is sitting outside?

Mr Keller-Tuberg—The differential between being battery backed and not battery backed is not to do with the power required to run the network. That is required in any case. So there will be a carbon footprint just to operate the network. That is common for both types of approach. The difference is in the footprint of the manufacture, distribution and disposal of those batteries. I have not come prepared with the actual data itself but I imagine that it would be a similar carbon footprint to the footprint of the security industry. Alarm panels that are already in homes have identical or very close to or identical batteries to that particular battery.

CHAIR—Are you confident that that work has been done, that the assessment of that footprint has been done from go to whoa?

Mr Keller-Tuberg—Yes, I am certain that the assessments have been done. The information is available. I do not have it myself, but perhaps somebody available to the committee will be able to answer that question.

CHAIR—Maybe you could suggest to the committee the potential sources of that analysis at a later point in time.

Mr Keller-Tuberg—We will take it on notice and get back to you.

CHAIR—Thank you. Mr Saglietti?

Mr Saglietti—I will start off by explaining the slide which ties in with a lot of the samples that have been spread around.

Senator MINCHIN—Can we get a copy of these slides?

Mr Keller-Tuberg—That would be our pleasure.

Senator MINCHIN—Thanks.

CHAIR—Should we hand them around now—

Mr Saglietti—Yes.

CHAIR—because I have been hogging them while waiting for you to get the call?

Mr Saglietti—They will all, sort of, fit into this presentation piece by piece. I will start off with a helicopter view of an optical network. We call it a passive optical network, given that there are no active devices out on the street level. Basically, this is an end-to-end solution, so it is from a fibre exchange to a home. You could visualise your local exchange within a community or, as Stefan said earlier, these exchanges can be much smaller. As the technology these days has significantly reduced the amount of hardware, we are able to significantly reduce the amount of equipment needed to be housed in the traditional exchanges that we see today.

We have here an aerial construction or an aerial link. This is very representative of what we have in Australia so we have kept this pretty much relevant to what we are going to face when we deploy fibre to the home or fibre to the premises. What we have here is an aerial deployment where the fibre is laid between the telegraph or electrical poles. Then from the poles a fibre drops into the apartment, home, building or commercial premises.

Senator MINCHIN—Aerially?

Mr Saglietti—It is an aerial construction. Later on in the presentation we have a series of photographs that show the impact of aerial construction versus underground construction. You would all be familiar, if you have looked up in some of the cities, with the pay TV—the hybrid fibre-coax network—up there. If you have a look at this picture you will see an underground network that virtually runs all the way underground from the exchange—from an underground pit—into the home. And they can co-exist; some areas can be fed from underground and some can be fed aerially depending on access and some of the sensitivities in some areas.

The picture on this slide will be a familiar sight in major cities and even in some of the country areas, where you will see the typical electrical transmission. You can see a number of strands—a strand there and a strand there—that are laid between the poles. What you can see here is an HFC network. I have brought in some of the coaxial cables used in HFC to show you. That is the one there—the grey one. And there is a black cable, which is about .75. That is the sort of cable that you will see commonly stringing pole to pole. That cable is also used in the ducting system, underground. So, as you can imagine, it takes quite a large amount of duct space to deliver that. We have two carriers in Australia—Telstra and Optus—deploying these types of HFC networks.

Senator MINCHIN—And there are others, as well.

Mr Saglietti—And there are other smaller ones, as well. If you have a look here you can see some fibre that has been run underneath and coiled up into a joint enclosure which is used to support the HFC network.

We will go to the next slide, which shows a little bit of a zoom-in on an RF amplifier for HFC. The services are deployed by coaxial cable and an optical termination. This next slide shows an example of fibre to the home being deployed where there is no HFC. There is nothing but power transmission. As you can see, it is very low impact compared to the HFC. That predominantly is because there are no active components in the outside plant, therefore there is no large power boxes. Also, the fibre cable is significantly smaller in diameter or in profile than a conventional coaxial cable.

Just to demonstrate that, some of the samples that we have provided show up to a thousand fibres in one cable. That cable there has a thousand fibres in one cable, which is approximately equivalent to one HFC main trunk cable. It is just beyond the imagination the extent of extra capacity there is between 1,000 fibres and one coax cable using the same diameter, not only aerially but in a duct space.

Senator MINCHIN—Is this what you would expect to be used aerially for optical fibre?

Mr Saglietti—That is what we would expect to be used from the exchange to a location within a residential area, generally underground at that point. From that size diameter, or slightly smaller than that, we would fan out to a lot of smaller fibres. Some of the examples that we have provided are around about this diameter or even half that diameter, and they are actually put underground or aerially. So we are looking at something in the order of this being the largest of a fibre drop but typically about half the diameter of that fibre. There are samples that we can show.

Mr Keller-Tuberg—I think it is important that we make a distinction between the various fibres that we have samples of. Some of the fibres that you have before you are intended to be in the main part of the network, so between the fibre exchange and the first fibre distribution point. Typically they are run underground in all networks. They can be run overhead but typically it is underground. Then it is the last drop between that fibre flexibility point or a feeder point where the choice is made to either run it overhead for that last few hundred metres or run it underground for that last few hundred metres. There are different fibre cables used in different parts of those networks. There are examples of the kinds of distribution fibre that you would more likely see overhead.

Mr Saglietti—To give you a perception of the real size of the glass in the fibre that you have there, Senator: the strand is a 250-micron strand and inside that we are talking a nine-micron core. That is really what you require to bring in all of the services. Of course, everything over and above that is the protection from rodents, from damage, that you need to have set up so that it can easily be installed. There are many different techniques and manufacturers that have presented different ways of delivering about the last home drop. That is a point that we wanted to make on behalf of the council—that the technology for fibre to the home is quite mature, and many generations of development have gone through to find the optimum type of fibre that is low impact, easy to install and has a long life. Some of those samples that you can see have gone through different migratory steps as the technology has improved.

This is a representation of zero impact of the installation of fibre to the home, where all the cabling for the fibre is deployed underground. If you look on this side of the street, you can see the utilities still have equipment above ground. With fibre to the premise, especially in a greenfield site, all of that infrastructure would be totally buried under the ground. A common street pit that you would see in most residential areas today would be able to accommodate that fibre-to-the-premise infrastructure.

Again, it is important to point out that the physical dimensions of fibre make it very attractive from a construction standpoint to try to get access into these ducts and to be able to run additional fibres in those ducts to facilitate the FTTP services. If you can see the physical size compared to the HFC, you can visualise that the effort would be significantly less than it was when we ran the HFC out.

This is an example of how the fibre would be brought in from, say, four, eight, 10 or 20 homes and aggregated into an underground pit. In that underground pit enclosure you would have a connectorisation or splicing where the individual homes would be connected onto a larger fibre cable that then would move to the exchange. There are two techniques, depending on the mix between residential and business. You have this technique, which is all underground, and a technique where you would have a small, aboveground cross-connect, where you could easily configure the fibre network to effectively accommodate the growth in a particular area. It may be a new development area; it could even be an existing area where there is considerable redevelopment. You may not be too sure how those services will deploy over a period of time, so an interconnection point housing all of the fibres allows you to cross-connect and be able to adjust your capacity depending on the growth of the surrounding areas.

I have here an example of that type of enclosure, which you could place either aerially or underground, that allows you to take the many hundreds of fibres that come in and join them all together to a larger fibre. In this example, you could have something in the order of 64 or 128 homes coming into this box. From there, out it would go in a fibre of around this diameter. The fibre could go back to an exchange five or 10 kilometres away, or it could go to another cross-connect point where it could be aggregated with a larger fibre more to the liking of these high-account fibres—250 to 1,000. That is very much up to how the network is designed and also the environment, access to duct space and aerial access. There is a balance between what the designers want to achieve and what you can actually physically achieve on the field, so there is a little adjustment required in how many of these you deploy and where you deploy them.

Having a look inside shows how all these fibres are connected. Like those small pieces of glass, they come in here and are spliced or connectorised onto another fibre. I will pass that around. Inside is an optical splitter that takes one piece of glass and splits it 32 ways. You can split it in one or two or up to 64 ways. There are many ways you can take one piece of glass coming down the street and service 64 homes, so you do not have to run 64 fibres all the way back to the exchange. There are many different architectures and many different technologies to service the different operators' needs.

Senator MINCHIN—If that were aboveground it would be attached to a telegraph pole, would it?

Mr Saglietti—Yes, that is right.

Mr Keller-Tuberg—Just be a little careful; it may disintegrate as you pass it around. The lid is not firmly attached—it is not designed to be firmly attached.

Mr Saglietti—This is a similar representation of the entire network but using a slightly different technology, which is popular in some areas. It is a technology they refer to as blown fibre, where they put the microducting and the ducting in prior to putting the fibre in. I have an example of that. It is like a water reticulation system, if you think about it, with small pipes. These pipes are laid underground. At a later date the fibre-optic cable is blown through these ducts. If you are going to dig up a road or put in some significant infrastructure and you have not been able to dimension how much fibre is required for the future and you want to protect or future-proof that civil works, like a new road or new pavement construction, you could elect to put a ducting system in like this that gives you the option to come back later and deploy fibre. It is another technique used and in some areas has merits.

Mr Keller-Tuberg—Peter, perhaps we should accelerate.

Mr Saglietti—Very quickly, the fibre-optic cable can come in many different shapes and sizes, as per the samples that have been provided, from armoured fibres to fibres that can be a suspended aerially to rodent-proof fibre, different fibre counts from one fibre up to 1,000, as in the example we have provided, and with all of the environmental attributes required to ensure that the investment has a long-term lifespan.

This slide shows the blown-fibre technique. There is a series of interconnection junctions that allow you to take a large duct, break it down into a smaller duct and ultimately end up with a single capillary duct into an individual home, without deploying the glass. At a later date you could deploy the glass.

This slide shows a few techniques used for installing cables into existing pavements. Effectively, the microtrenching technique that is used in Europe quite extensively minimises the impact of disturbance of the surrounding area by cutting a very narrow trench, just adequate to allow you to lay the fibre. You can see that it is a small trench—something in the order of, say, four or five centimetres and whatever depth is required. The fibre is then laid in these trenches and it minimises the impact of digging up streets and all of that, which is something that everyone wants to avoid because of the cost impact associated with that. There are many different ways of doing it, including underground boring. You can imagine having to run a new cable, having to dig up a whole street, disrupting everything and then rebuilding the infrastructure. There are many techniques of underground boring whereby you can bore underneath and put in ducting without disrupting the surface assets. Most road crossings are done that way in order to get from one side of the road to the other and to get through sensitive areas. The impact of deploying fibre to the premise is substantially reduced when using these types of techniques. You can see that there is very small impact on the pavement after the fibre has been deployed.

This slide shows a typical fibre junction—what you would find in a pit. All of the joints are in enclosures. What we are trying to point out in this slide very briefly is the maturity and variation of devices, fibres and termination units to make the whole process efficient. There is a reduction in the use of field connectors. Very expensive equipment used typically in the backhaul is no longer necessary. The fibre connection can be done simply. There is a very large impact on the

training of the workforce, efficiency and the rollout rate if you can reduce the complexity of the devices that you are installing. This represents many different types of products that have evolved in the experience in Japan over many years of trial and error. We really have a very mature third and fourth generation type of product now.

Mr Keller-Tuberg—In our submissions to the department of broadband and to the Senate select committee we identified that there is a lot to be learnt from the experience of deploying fibre. It is typically the experience in all countries where fibre is deployed that the workforce discovers specific local issues and innovates to improve and streamline the deployment of fibre as the deployment takes place. As fibre rolls out in Australia we can take advantage of many of the lessons that have been learnt in the Asia-Pacific and greater international markets where fibre has been deployed. Almost certainly we will come across some specific Australian issues, which our workforce will innovate and overcome. During the process of deployment of fibre to the premises it is very important that the management of the overall deployment process is cognizant of the lessons learnt and efficiently distributes the new information and the new techniques so the ongoing deployment can be as streamlined as it can.

CHAIR—Thank you very much.

Senator MINCHIN—Presumably there is a big cost benefit in rollout from aerial. What is the differential? Do you have a rule of thumb that says, 'Underground is five times as much as aerial?'

Mr Keller-Tuberg—That is a very difficult question to answer from the perspective that Australia is a vast continent and we have many different examples of different communities deployed in different ways. The council always encourages the maximum use of existing infrastructure. Sometimes that means there are ducts already in the ground. It is of tremendous advantage to fibre deployment to be able to use ducts that are already in existence if they are available. Sometimes it means there are pole assets throughout the community. Because they already exist, it is a relatively straightforward way of deploying fibre quickly without having to erect new poles. Sometimes the assets that exist are not suitable. There are many technical deployment questions that the deployer will come across as they plan the area by area rollout.

It is not easy to come up with a definitive rule of thumb that says one technique is less expensive or more expensive than another. In some cases you will find underground deployment is cheaper than deploying brand-new aerial infrastructure. In other cases you will find aerial deployment is cheaper and faster and has less impact on the community than deploying underground. I realise this is an unsatisfactory answer to the very specific question, but it is the reality of the way that the design of networks roll out.

Senator MINCHIN—It does mean that in rolling it out across Australia it is going to be highly complex because you have to look at it suburb by suburb and region by region.

Mr Keller-Tuberg—Indeed.

Senator MINCHIN—Presumably, you have to take into account the propensity for bushfires, hurricanes and all the rest of it as well.

Mr Keller-Tuberg—These are very important points that you raise. We are very confident that Australia's telecommunications engineers and public works companies and organisations have experience from over the last century of rolling out telecommunications networks in Australia of how to deal with those kinds of issues. It is important that we recognise that we already have a lot of expertise built up on existing networks and deployments that we can apply directly to the deployment of fibre to the premises. We need to leverage and harness all of the lessons we have already learnt about the rollout of networks in Australia to take best advantage of the fibre-to-the-premises rollout.

Senator MINCHIN—Your council is based in Singapore. Much of the rollout that has occurred is in Asia where, presumably, you have extremely dense populations. Ours is so much the opposite—we do not live in high-rise apartments typically; it is a much more suburban environment. That must make it much more expensive and more problematic as well.

Mr Keller-Tuberg—Some members of the Fibre to the Home Council focus their activities in the Asia-Pacific area and some members concentrate throughout the world. Good examples of lower density fibre-to-the-premises deployment can be seen in Europe, particularly in North America, where there is really dramatic and fast roll out of fibre to the premises taking place in the kinds of urban and suburban situations that are typical in Australia. Indeed, you are quite right, in the Asia-Pacific area there are probably more examples of high-density deployments. The important point is that the Fibre to the Home Council members and the deployers of infrastructure in Australia are very familiar with the kinds of techniques we can use to deploy fibre efficiency in the kinds of situations we have in Australia.

Senator IAN MACDONALD—What size cable would normally go through an average suburb that already has overhead cabling?

Mr Keller-Tuberg—The kind of conduits that you are holding are typically used underground. Those particular ones are deployed underground. Generally the smaller of the examples that you are holding is typically deployed in the last run down the last 100 or 50 metres in a street—each tube corresponding with one consumer or one premises. You can aggregate these—almost like a garden reticulation system you start with the smallest capillaries at the ends and as you reticulate closer to the source of water and the tap you go to larger pipes and you bring all of these endpoints together. So the larger one is an example of that. Normally the kinds of conduit you run down a street would accommodate several of these kinds of blind fibre subducting. If a single conduit is insufficient then you would normally lay a second conduit.

Senator IAN MACDONALD—Which ones would you use overhead though?

Mr Keller-Tuberg—Of the examples that we have bought today, some of the stand-alone cables are examples of what could be used overhead.

Senator IAN MACDONALD—Do you mean this sort of stuff like this one I am holding up?

Mr Keller-Tuberg—I am afraid my eyesight is poor, but I believe that is a—

Mr Saglietti—That is a drop cable from the pole to the home. It would be slightly bigger than that between pole to pole.

Senator IAN MACDONALD—But we are talking about this sort of thing?

Mr Saglietti—Yes, that is correct.

Senator IAN MACDONALD—And what about the one the secretary is holding up?

Mr Keller-Tuberg—I believe that is an overhead coaxial cable.

Senator IAN MACDONALD—So it would not be that?

Mr Keller-Tuberg—Sometimes those cables are used for lead-ins for a coaxial cable deployment. So you will find various examples of coaxial cable and twisted pair cables in the Australian network.

Senator IAN MACDONALD—But it would not be anything of that size?

Mr Keller-Tuberg—The one that you are holding now is a distribution cable. It is for running pay TV over longer distances. It is very rare that one of those would go into the house.

CHAIR—Thank you very much appearing before us today. It has been very interesting. We will give you back your showbag items, or are they for the committee to retain for posterity.

Mr Keller-Tuberg—The committee is welcome to retain some of those items if it would be of benefit.

[2.03 pm]

HUTLEY, Ms Sue, Executive Director, Australian Library and Information Association

RICHARDS, Ms Jan, President, Australian Library and Information Association

CHAIR—I welcome the witnesses from the Australian Library and Information Association. These proceedings of the committee are public and subject to parliamentary privilege. It is an offence for a person to attempt to interfere with evidence that would otherwise be given by a witness to this committee, and it is potentially in contempt of the Senate—as it is for a witness to give false or misleading information. If at any time you wish to provide your evidence in private then please say so and we will consider your request. We have received your submission. Do you wish to amend it in any way?

Ms Richards—No. We are very happy with our submission as it is.

CHAIR—Then I invite you to make a brief opening statement.

Ms Richards—The Australian Library and Information Association, or ALIA, as it is more commonly known, and the state public library association's welcome this opportunity to appear at this public hearing. We are the peak body representing the Australian library and information services sector and we represent 6,000 members. We also represent the interests of over 12 million public library users, or about 50 per cent of the Australian population. ALIA is a not-for-profit company. We work with other not-for-profit organisations in the library information and collection areas. Our core value is the promotion of the free flow of information. A thriving culture, economy and democracy requires the free flow of information and ideas, and fundamental to that free flow are Australia's library and information services.

The Australian library and information services sector operates at the local, state, territory and federal government level in schools, TAFE, tertiary institutions, research institutions, and the health and business sectors. We believe that, with its high usage of electronic information, services and public access points, the library and information services sector is a major stakeholder in the national broadband strategy. The goal of connecting 90 per cent of Australian homes, schools and workplaces must recognise the crucial role of public libraries in providing vital infrastructure for Australia's digital future.

Why are we interested? Public libraries provide vital infrastructure for Australia's digital future for the following reasons. Through our existing physical infrastructure there are public libraries in every local government area across the nation—that is actually 1,519 public libraries. Research has demonstrated that they are recognised as trusted and friendly. They are free, they are neutral and they are non-threatening spaces. They are the heart of their local communities. They have been described by social commentator Hugh Mackay as 'the new village green'. They are already contributing to the government's agenda in the areas of literacy, the digital economy and social inclusion. Last Thursday we had the ALIA public library summit, which was opened by Senator Ursula Stephens.

There has been a huge increase in the usage of the internet in public libraries. There has also been a great increase in community expectations of internet assistance through public libraries. Public libraries have qualified and experienced staff. Over 111 million visitors by customers were recorded in 2006-07, which are the latest available statistics. That is 9.3 million visits per month. They are attended more frequently and by more people than any other cultural or sporting venue. They generate economic as well as social, cultural and environmental benefits.

They provide a range of services to their communities. These include: skills training and assistance for users, support for early and adult literacy, and support for lifelong learning. In remote and rural communities and in Indigenous communities they provide great support and services. They provide services to the most marginalised groups in the community, who are without internet skills or computers at home. They provide programs and resources for non-English speakers. They provide services to people with a print disability. They provide access to online information resources and access to e-government services and publications. And, of course, we provide books.

Across the public library network there is evidence of increasing demand for access to the internet. Since 2005 we have conducted four surveys into internet access. The last survey, in 2008, showed that increasing and improving access to the internet remains a priority for public libraries as community expectations increase. The number of public access internet terminals has more than doubled since the 2005 survey. There are currently 7,500 public internet terminals across the country. An estimated 150,000 users access the internet each week in the responding libraries. That is an increase of 91 per cent over the same survey of 2005. In New South Wales a recent survey showed that internet usage in libraries is up by 41 per cent over last year, and there is evidence that library usage increases during periods of economic downturn. That is substantiated by general increased use of libraries in times of economic downturn.

Community expectations for internet assistance are growing. The demand is for assistance from public library staff in using electronic services not only for government information but for everyday living skills. This includes e-banking, setting up a mobile phone, online shopping and setting up an email account because where else can people go to get this? A large part of this demand comes from people from lower socioeconomic levels, the unemployed and the elderly.

In some rural and regional communities the public library is the sole location for access to government services and publications. For example in the western New South Wales town of Hillston, the Centrelink fax machine is housed in the library. In many regional and rural communities the library is the only public service that still exists—the bank has closed, so has the post office and so the library is the centre of the community. Government agencies are sending people to the local library for government information such as social assistance forms, income tax forms and car licence renewals, and to practise their driving tests online.

In a case study from Western Australia a man in his early 60s came into the library with an internet address in his hand. He had written it down from the TV. It was going to give him all the information he needed to attend a reunion of workers on the Snowy Mountain Hydro-Electric Scheme. He has subsequently become a keen reader and a regular patron of the library. Similarly, a lot older clients prefer to come to the library to have internet training because they see it as a warm and inviting environment where they do not feel that they are being judged by someone that they see as a young techno-junkie.

Senator IAN MACDONALD—Do most libraries actually provide tuition?

Ms Richards—Most do, yes. Their ability to do so can be limited by the staff's training. I guess there is a preconception that the staff know a lot about the internet—and they probably know a lot more than the people that they are training—but they do not necessarily feel that they have the skills to be able to do that. We see that as a key component as well in being able to provide training to staff to be able to on train and to remain up to date with those skills.

Senator IAN MACDONALD—Sorry, I interrupted you.

Ms Richards—That is all right. Broadband is significant not just for the infrastructure it provides but for the rich information resources which can be accessed. Access to quality online information is fundamental to a well-informed, educated, economically competitive and democratic society. The Senate committee report, *Libraries in the online environment*, which was done in 2003 highlighted the importance of developing government policy to improve access to information for Australians. The National Library of Australia, which is the only federally funded public library, has taken the lead in developing Electronic Resources Australia, ERA, launched in May 2007, to provide resources such as online encyclopaedias, journal article collections, health, news and current affairs through libraries of all types. Australian's however will be only be able to have broad, equitable access to these and other resources when a new federally funded model is implemented.

Funding government services and information online is very difficult. A recent report *Online availability of government entities' documents* tabled in the Australian parliament noted that 10 per cent of Australian parliamentary documents were not online. In addition, there is a lack of both metadata and a reliable government information search service. Government information needs to be available to the public for long-term access. Current information must be accessible so that the public can use government services and participate in public debate. Historical or non-current information is equally important, particularly for research purposes, and must be available for legal, cultural and historical reasons. At present, agencies may only have current annual reports and other information online limiting access by the community to information and programs of government activities beyond the current year. A permanent national archive is required for long-term access, such as the National Library's PANDORA services.

We believe that what is needed is funding for ALIA to act as the lead peak body in developing a national framework for funding for Australian public libraries to enable Australia's digital future. The success of the NBN will depend on cooperation among the three levels of government for Australia's public libraries. National programs need to include literacy and information and computer skills, investment in quality online resources in health, news and current affairs, the environment and encyclopaedias through Electronic Resources Australia as part of the National Library's funding, and ensuring enduring access for Australians to government information through the funding of PANDORA as part of the National Library's funding.

The NBN strategy needs to include funding on a continuing basis to support internet education and skills training for users to be delivered to communities via public libraries. The strategy needs to recognise the needs of an ageing population and the role of public libraries in filling these needs.

ACTING CHAIR—Thank you very much for your presentation and opening remarks. In general the descriptions of the National Broadband Network have cited 100 megabits per second bandwidth. How will that change the library community, in your view, and what sort of plans are already being contemplated to optimise libraries' use of that kind of high-bandwidth environment?

Ms Hutley—ALIA believes that the general public will be welcoming that and expecting it to be delivered through public libraries. Even if you have a computer at home, when you travel or are visiting somewhere, sometimes the only location that will have a computer will be the public library. Certainly we will be expecting to be able to deliver that through local councils and public libraries. In terms of how it will change the library community, we believe that demand will also increase. For those who do not have a computer at home—and not only are there are a significant number now but we believe with the recession they will only increase—the demand for the internet through public libraries as a common community access point will only increase. It will be drawing larger crowds and longer lines for those internet access terminals at public libraries, and it is one of the things that the National Broadband Network strategy must consider.

Senator IAN MACDONALD—If every school kid will have a computer, why would they need to go to a library? That does not require an answer; it is a political comment.

ACTING CHAIR—And we will take it as such.

Ms Hutley—We could reply to the comment, however, that we see that school students, like everyone in society, like to come to libraries to conduct their business in a group. So I am sure that we will be seeing groups of schoolchildren bringing their laptops to the public library and also perhaps to use the wireless.

Senator IAN MACDONALD—Perhaps the government's policy should have been to provide every public library with a lot more computers and trained staff.

Ms Hutley—Hear, hear.

CHAIR—I am sure you will get no argument from ALIA.

Senator LUNDY—Just to follow on from that train of thought, I know that last time I had the opportunity to speak to a ALIA in an inquiry there was a great deal of discussion about the specific role of libraries in a digital age. Are there any particularly noticeable trends you can draw the committee's attention to with respect to growing internet usage within libraries? Perhaps as part of that question, have you noticed any changes in usage patterns as a result of social networking and social networking websites?

Ms Hutley—Yes. Again, I think the public library is the access point for those who are in the advanced areas. Some of your other presentations have acknowledged that these days skyping, Facebook and other social networking are expected as part of general life for those who are advantaged. What we also assume is that, with the rollout of the NBN and the additional education about what the internet can do for you, the expectation from the community, the voters, will be that they will be able to access that no matter how advantaged or perhaps disadvantaged they are.

Senator LUNDY—Have you done any specific analysis or work on the resource implications for libraries individually or libraries as a whole as part of your, I suppose, pitch to government about what additional resources would be appropriately placed in public libraries?

Ms Hutley—I would like to again acknowledge the 41 per cent increase in New South Wales usage alone in the last couple of years. If we take that percentage, once the rollout starts to occur and the expectation is there, we are looking at significant increases for the requirements for resourcing and staffing. We would be pleased to provide you with additional percentage options at a later date.

Senator LUNDY—Any additional information you could provide the committee would be most welcome. You mentioned socially disadvantaged or perhaps economically disadvantaged people not necessarily being able to afford the higher bandwidth services in their home. Because of some of the disparities across the geographic regions in accessing higher bandwidth services, are there any trends that you can point to in rural or regional areas where libraries may be able to provide a higher bandwidth service that would not otherwise be available to the broader community, albeit probably a lucky few?

Ms Richards—In regional and rural libraries the internet use is significantly higher for that very reason. While many of our clients have the internet at home, they come into the library because of faster speeds. In addition, libraries subscribe to databases that are not necessarily available at home. As well, there is the whole social network and the value-adding that is provided. Increasingly, as the baby boomers retire, we find that they are going from a work environment where they are used to having high levels of technology and a lot of the peripherals—not only fast broadband but scanners and everything else as well—and they want the latest. Libraries have much more chance of having that than they do at home. In keeping up to date they really like to be able to use the library not only for the social and the value-added aspects but because it is more likely to meet their needs. It is the same with young people—it is a social place.

Many libraries now have wi-fi and wireless hot spots, which are particularly useful for expanding the coverage. It means you do not necessarily have to have as many hard-wired terminals. You see young people after school and young professionals after work coming to the library to sit down and work together as a group. So the library really is fulfilling that social role as well. It is quite amazing to see all these young, suited people arriving at five o'clock with their laptops under their arms. Often that is the whole social-networking side of things as well.

Senator LUNDY—That is very interesting. From the other perspective, which is what libraries have to offer in your suite of information available online, I am quite familiar particularly with the resources of the National Library. Could you spend a couple of minutes describing the sorts of services libraries provide online with their cataloguing and search and question-and-answer services and how the community may benefit by having higher bandwidth to access the online resources of libraries per se.

Ms Richards—Libraries increasingly have an extra branch, which is their virtual branch, which can be accessed by people coming into the library but also from home. That includes, as you have mentioned, the catalogue. Most libraries now have their catalogue available via the web. They have services whereby people can ask questions of the staff from home and

sometimes they link into bigger services, so people can ask someone for some assistance 24/7. Libraries also subscribe to a varying array of online databases so that people can get quality information to answer their reference and information needs.

Many public libraries also provide online tutoring services, where they subscribe into a tutor service so that young people can get help with their homework—particularly in the areas of maths, science and English. There is a whole suite of products. In the area of heritage and history, many libraries are building quite large databases so that their community and also the much wider community can access their photographic databases and digitised images of historic records in their collections.

Senator LUNDY—How do you think a higher bandwidth environment will change the sorts of things that libraries make available on the web?

Ms Richards—Currently libraries are very mindful, particularly in country areas, of the time that it takes to download resources. Many gems in our collections do not become available because we know that it will be too hard for our immediate communities to be able to access them. So the library collection becomes very much centred on the location rather than being available to people no matter where they are. We talk about remote communities but there are people within our own community who may be a street away from our library but, because of the hours that we are open or their lifestyle, they may be quite remote from it.

Senator LUNDY—Thank you very much.

Senator IAN MACDONALD—Would you have a feel, if not direct data, of what percentage of libraries have less than optimum broadband connection at the present time?

Ms Hutley—We acknowledge that the city locations do have good speeds. In terms of quality, however, I think that there is acknowledgment that the local government services public libraries, and so the quality is also dependent on the hardware available at the library location. So there is a combination negative effect, especially in rural areas, of low bandwidth and low hardware capacity, which is also seriously impeding the services available to the community in terms of download capacity as well as the number of terminals.

Senator IAN MACDONALD—But if you did a survey of your libraries and library members and asked which of them have an adequate service now, I assume you do not have direct data, but do you have a guesstimate?

Ms Hutley—Our ALIA surveys, which we have provided to the committee today, have a number of statistics. In terms of our recent surveys, we have asked our library staff to give feedback. In terms of negative feedback received from public library staff, they say that 77 per cent relate to requests for access to more terminals, faster connection speeds, more downloads and increased bandwidth. In terms of the number of complaints relating to the internet at public libraries, 77 per cent relate to the actual speed of connection and availability.

CHAIR—We might come back to that. I think Senator Macdonald has the only copy of that survey that you have provided today. Pending that, Senator Minchin had one further question.

Senator MINCHIN—I understand that libraries typically provide all computer services for free.

Ms Richards—Yes, generally we do. Libraries are currently creatures of state and local government and there are differing requirements at the local level, but internet access for information is generally free. It is only the value-added services that there may be a charge on.

Senator MINCHIN—Like printing something?

Ms Richards—Printing and, in some areas, email can be charged for.

Senator MINCHIN—I was about to say: do people come in and just sort of free-ride and use you for their email and so on?

Ms Richards—It depends. In my real job I manage a regional library service in New South Wales with five councils. Four of them provide email for free and one charges.

Senator MINCHIN—So it varies and it is up to each council?

Ms Richards—It does vary.

Senator MINCHIN—But otherwise generally the council will fund the library and the use of the internet in that library.

Ms Richards—Yes. It is quite a complex issue. When a lot of those decisions were made originally you could quite easily say. 'This is email and this is information.' But now you are required often to have an email address to be able to undertake a lot of transactions which we see as core. A classic example is that libraries often assist job seekers in looking at what jobs are available. Library staff are always helping young people, and the community generally, to use word processing to write up their resumes. Many of the major employers now require that if you apply for a job you do it online. The Coles and Woolworths of this world require that, and for that you need an email address. Then there is that whole issue of whether you say to someone who is looking for work, 'You can do this but if you want to do the email bit you have to pay.' We are having to change the way that we think about things. It is a complex situation. Because so many of these things are developing, there is no clear-cut answer.

Senator MINCHIN—Whenever you provide a service for free, the demand will always exceed the supply. I can just imagine, as and when we do get a fibre-to-the-home rollout, to the extent that it is more expensive than current services the demand on libraries could increase quite substantially. At some point you are going to have to ration the use of your facilities, I would have thought. Are you looking at funding models or means testing or charging or some mechanism by which you would seek to recoup at least part of your costs from those who use them?

Ms Richards—Core library services are free. Information, no matter which way it is delivered, is a core library service. If you are going to say, 'You can do this for free but for this you must pay,' when it is delivered out of a computer terminal, it means that library services staff will become police and will not be there to actually assist people.

Senator MINCHIN—The only way I can see you rationing it is if you have queues. Is it becoming a problem now that people have to queue up?

Ms Richards—Yes. Most library services have a booking service for their internet terminals.

Senator MINCHIN—Okay, so you get an allotted time?

Ms Richards—Yes. That is why wireless hotspots are a very worthwhile investment because they allow you to free that a little bit.

Senator MINCHIN—Sure.

Ms Richards—They are also great for the grey nomads. They are great devotees of public libraries.

Senator IAN MACDONALD—To the detriment of internet cafes, I assume?

Ms Richards—I would say that outside metropolitan areas there are actually very few internet cafes. Those that exist are often about to close because people who have gone down that path as a commercial opportunity have found it a very difficult thing to do, especially when you take into account the constant work you have to do on your software. It is not necessarily the goldmine that people thought it would be. So in many regional communities and provincial cities of quite large sizes you will find that the only place where you can access the internet is at the library.

Senator MINCHIN—You have to sell a lot of coffee to make it pay, I think. There is one figure in this useful booklet that I want to raise. You have written that there are 8½ thousand PCs, 7,000 of them with internet access, and this costs Australians $757 million—less than 10c a day each. Is that $757 million figure the cost of libraries per se or the cost of internet access at libraries? What is that figure?

Ms Hutley—That is the total government allocation for state, local and federal government funding for libraries. So we would like to remind the government that libraries should be free for its constituents. We welcome the government's funding and other support.

Senator MINCHIN—I suspect that is a better investment than some of the school halls being built around the country, but you do not need to comment on that.

Senator IAN MACDONALD—Following up on Senator Minchin's earlier point—and this is not a political comment—there are suggestions that access to broadband, of necessity, will have to become much more expensive. I am yet to hear a library say it is not underfunded and could not use more money. But if broadband does become more expensive that is going to exacerbate your budgeting problems, isn't it? You are going to provide it as a free service and people are not going to want to pay for it at home, so they are going to use yours. It is really going to exacerbate the general funding problems for public libraries, isn't it?

Ms Richards—Yes, it is. Already public libraries, as you so rightly point out, are grossly underfunded and are having to make very real decisions now about where they put their dollars.

We see the internet as a resource. We have been able to rationalise our collections to a degree because we now use things online rather than having them in hard copy. But it means that we have to think creatively about what we buy for our collections. We are also having to make some very hard decisions about hours of opening and staffing. Staffing is the big cost in any library, so that would potentially restrict the community's access to that space and that information resource.

CHAIR—You talk in your submission about the value to community of public libraries. How do the role of public libraries in building virtual communities, and the role of what I understand are regional development officers working with libraries towards that end, work in with or alongside the NBN? Is there going to be duplication?

Ms Hutley—In terms of virtual communities, we have already mentioned some of the developments in terms of local communities developing things like databases or historical collections, especially Indigenous collections online that are now really giving very different access. In terms of duplications, I would like to acknowledge that libraries are very collaborative and share resources as well. In terms of duplication, one of the advantages of the library network is that we talk to each other and collaborate to ensure that we are providing services as efficiently and effectively as possible. That is, again, one of the reasons why we recommend that the federally funded resources—through the National Library of Australia, with PANDORA and ERA, Electronic Resources Australia, as examples—provide total national coverage for all Australians, which would completely nullify any duplication.

CHAIR—Thanks for your view on that.

Senator MINCHIN—This is not exactly in this committee's terms of reference, but I noticed your submission on the bottom of page 4 says:

ALIA strongly opposes the imposition of any conditions or limitations on equitable access and freedom of access … such as the requirement for the use of filtering systems.

Should I take it as a statement of policy that your association is opposed to the proposed mandated ISP level filtering? Is that what you mean by this?

Ms Hutley—The internet access reports that we have provided to you today and our policy statements say that we object to filtering on the basis that it is not completely functioning. Certainly at the ISP level it has not proved to be effective. We believe that training and education of the Australian public serve a greater advantage in terms of the funding in relation to internet security.

Senator MINCHIN—That is a statement for which I have much sympathy. What do you do typically at the library level? Do you have PC based filtering? How do you stop people coming in and looking up porno sites in the library?

Ms Hutley—We have a range of methods, again outlined quite clearly in our survey reports. There are a number of methods. Forty per cent of Australian libraries do have a version of filtering systems. However—

Senator MINCHIN—PC based filters?

Ms Hutley—PC, through the council again. But libraries and librarians believe that the education and a range of other methods that we use, including policies such as having parental signing for internet access, but also the fact that internet terminals are usually in a public space—they are not in a back area; they are monitored by library staff—provide open access for Australians.

Senator MINCHIN—Yes. Thanks.

CHAIR—I have one further question about virtual communities. I understand your organisation's view in a policy sense and as you have expressed it, but what about in practical terms? Let us ask the question in another way. Should the regional development officers that are proposed to be a part of the development of a virtual community be located, for example, in public libraries across the country? How should the government unroll that, in a practical way, so as to ensure meeting your policy goal? That is another way of asking the same question. Where would you put the regional development officers? You might want to take that on notice.

Ms Hutley—We can. However, we would like to note that public libraries are a central community hub and perhaps they are appropriate locations to have access to those regional organisers. Certainly, the library community will be working with them anyway as the NBN rolls out.

CHAIR—Okay. Have you had discussions to that end—any consultations? Has the government approached you?

Ms Hutley—No, and we would welcome further discussion on that.

CHAIR—Yes, noting your earlier, proper statements that you are a stakeholder in the process. Thank you very much to the Australian Library and Information Association.

Ms Hutley—Thank you.

Ms Richards—Thank you.

[2.42 pm]

CHOPRA, Mr Sameer, Director, Australian Equities Research, Deutsche Bank

CHAIR—The committee welcomes Mr Chopra from Deutsche Bank. The proceedings of the committee are public and subject to parliamentary privilege. It is an offence and potentially in contempt of the Senate for anyone to attempt to interfere with evidence provided by a witness or indeed for a witness to give false or misleading evidence. If you wish at any stage to provide your evidence in private, please request that and the committee will consider your request. Do you wish to make an opening statement, Mr Chopra?

Mr Chopra—If I can. We have conducted financial modelling on the impact of the NBN on Telstra, including an estimate of some of the initial costs of constructing the project; we have had a look at the profit pool that the NBN will seek to replace; and we have also placed a value on the copper asset at Telstra. Very briefly, the NBN business case in my view requires about $28 billion of funding. There are four factors which drive this: firstly, the cost of building this network; secondly, the take-up rates; thirdly, the access prices that you might charge on the network; and, fourthly, the cost of debt. Using those, we come up with a number around $28 billion. If the NBN company does face an adverse environment, that construction cost could go up towards $42 billion—and I think that is where the government are getting their $43 billion number from. In my view the NBN company will start generating operating profits about five to six years after operations start. They will need to raise about $16 billion of debt, with the first major tranche coming through in year 3.

Finally, there is a win-win scenario here in a deal which would involve Telstra vending in their copper asset to the NBN—just the copper and the ducts, not any of the backhaul or the cable asset. We have valued the copper asset at about $8.5 billion, assuming that the company generates just over $2 billion in operating profits. If this deal were to proceed, in our view the benefit for the government is that the copper asset will provide the government with immediate manpower, which significantly reduces the risk of the NBN construction. A final point on this is that the big complication in all of these vending scenarios is the cost of structural separation. We have attempted to estimate that cost and we would suggest that it is around $2.5 billion.

Senator IAN MACDONALD—The cost of physically separating it?

Mr Chopra—Yes. The cost of structurally separating the company breaks down to two things. One is a one-off capital cost and then there are ongoing costs because you have diseconomies of scale. We have had a look at the two combined and I have estimated that the upfront costs would be in the region of about $620 million and there would be about $260 million of ongoing operating costs that you introduce into the system. I can break that down for you.

CHAIR—That is an interesting coincidence in figures—$4.7 billion.

Senator MINCHIN—On what you are proposing, it is a bit too short-circuited. You are suggesting that Telstra should sell its copper asset as opposed to its wholesale business?

Mr Chopra—That is right.

Senator MINCHIN—Just the copper itself?

Mr Chopra—The copper loops and the ducts—anything that goes from the exchange to the home is vended into the NBN.

Senator MINCHIN—For $8.5 billion?

Mr Chopra—For $8.5 billion. The way we have structured that is that the asset transfers across to the NBN company alongside $8.5 billion of existing Telstra debt. For reference, Telstra currently has about $17 billion of debt, so what we are suggesting is that $8.5 billion is resumed by the—

Senator MINCHIN—So the total consideration is $17 billion?

Mr Chopra—Eight and a half billion dollars is the consideration. The consideration is just the debt moving across from Telstra to the NBN company.

Senator MINCHIN—I see. For that, the NBN company gets the copper?

Mr Chopra—They get the copper for that. The asset itself—

Senator MINCHIN—They get copper on their one hand and Telstra's debt obligation on the other?

Mr Chopra—That is right.

Senator MINCHIN—What use is the copper to NBN Co.?

Mr Chopra—There are two real uses: one is the copper and there is the manpower that goes with it. What we are suggesting is that the copper asset lets them control take-up rates and lets them choose what they want to do with the ducts—if they need access to the ducts—but, more importantly, they also end up with something like 6,000 employees who have built and maintained networks. So what we are suggesting is the risk of a capex blow-out reduces.

Senator MINCHIN—That is what I am getting at. You are actually talking about the whole wholesale business. You are not just talking about physically selling copper; you are talking about splitting Telstra in two and selling off the wholesale business—are you not? You are talking about employees and all that stuff.

Mr Chopra—Theoretically, where we have put the cut-off is at the copper loop and the employees and the systems that go with that. We are saying that Telstra still keeps the electronics, the back haul and the cable network.

Senator MINCHIN—I am just trying to drill down on where the virtue for NBN Co. lies—that they acquire all these employees and copper. Do you mean that from day one they can start generating cash from the copper? Is that the point you are making?

Mr Chopra—Yes. The NBN company has three benefits. The first is that from day one they will have a business with about $2 billion of EBITA, or operating profit. Second, they can control two of the risks that they face. Two of the biggest risks that they have are the take-up rate onto the NBN and: can I keep my capex bill down to what I originally projected? What we are suggesting is that the best people to do that are with the current Telstra net co.

Senator MINCHIN—What are the advantages for Telstra in this?

Mr Chopra—The advantage for the government is something we valued at about $9½ billion; that is the level of risk mitigation that can occur from doing this deal. The advantages for Telstra stockholders are in the economics of it. One is that they can get an earnings-neutral outcome, which means they do this deal and it does not really affect the earnings from a stockholder perspective; you lose some on the copper but you make it back on lower interest costs. Telstra also becomes a business with lower capital intensity; they need to put less capex into their business; I have some numbers in the note which I am happy to walk you through. Also, their gearing halves and some of the regulatory burden disappears.

Senator MINCHIN—But who bears the $2½ billion cost of separation?

Mr Chopra—That is where things will get a lot more interesting: how do you structure the structural separation? In some ways, a better mechanism around that might be to transfer the legal ownership of the asset across to the NBN company but allow Telstra to manage and maintain it, so you pay them—

Senator MINCHIN—Contractual arrangements, yes.

Mr Chopra—Exactly. That way you can try and minimise the cost of structural separation.

Senator MINCHIN—Yes, but what would be the hit? You do not think there would be a one-off hit on Telstra shareholder value from that?

Mr Chopra—If this were a clean structural separation—let us assume, for example, that this is a structural separation without the NBN company buying the asset—then we would suggest that the value destruction is about $2½ billion.

Senator MINCHIN—Have you translated that to share price?

Mr Chopra—It is about five or six per cent.

Senator MINCHIN—You mentioned your estimate of the NBN Co. taking five to six years before it would generate profits; I think that was the way you described it. Is that five to six years after rollout is completed, or halfway through, or from day 1?

Mr Chopra—That is from day 1, and that is at the operating level. But the NBN company, we also assume, will have significant debts, and therefore—

Senator MINCHIN—Yes. So it is just an operating return.

Mr Chopra—It is just at the EBITA level.

Senator MINCHIN—And that is assuming that in fact it is an eight-year rollout—is it?

Mr Chopra—That assumes an eight-year rollout and a take-up rate that is around 30 to 40 per cent in the first four years.

Senator MINCHIN—Right. But it would be operating at a loss for the first five to six years on an operating basis—

Mr Chopra—Yes.

Senator MINCHIN—leaving aside the cost of servicing the debt. It has to incur more debt to fund those losses.

Mr Chopra—Yes, and I think that is why we were suggesting that if the construction cost is, say, $25 billion then you actually need $28 billion; you need an extra $3 billion to help fund the operating losses in the first few years and the debt you need to incur for that.

Senator MINCHIN—What takes it from the $28 billion to the $42 billion in your mathematics?

Mr Chopra—We have said that there are four sensitivities. The first one is the cost of debt if the cost of debt goes from, say, five to seven per cent; the second one is take-up rates; the third one is the capital construction cost; and the last one is the access price. If all four of those are adversely impacted then you go from $28 billion up to $42 billion.

Senator MINCHIN—Does the $42 billion figures assume no Telstra deal?

Mr Chopra—It assumes that Telstra will take up services on the NBN but that they will make that on a commercial basis.

Senator MINCHIN—Yes, but your scenario of the transfer in of the copper assumes that has not occurred.

Mr Chopra—That that has not occurred, yes.

Senator MINCHIN—Presumably, if this thing does not involve Telstra, for some time it will be competing with Telstra.

Mr Chopra—That is right.

Senator MINCHIN—So that is going to make it much more difficult for it to generate an operating profit in that time frame, presumably.

Mr Chopra—Yes. Our initial analysis—the one where we suggested that they would generate an operating profit in the fifth year—is based on the assumption that they are competing with

Telstra. So we have assumed take-up rates are low—that they are running at around that 30 per cent level. A 30 per cent level is something we have seen in the US, and it is US-related data that we are applying in Australia.

Senator MINCHIN—I was just looking at something and saw that take-up in Singapore after a year is only one per cent. Do you think that the take-up rates can confidently be based on the US example? This is Verizon, is it?

Mr Chopra—Yes, we have used Verizon as our benchmark. Their take-up rates at year two were running at about 25 per cent. Currently, they are running at about 30 per cent. They have rolled it out to about 16 million homes.

Senator MINCHIN—Have you built into your assessment the extent to which this service is likely to be increasingly facing competition from mobile and wireless? I do not know what pricing assumptions you make. I do not know whether you have read Southern Cross Equities's submission but they are basing it on the $42 billion figure. The retail pricing would have to be double but it currently is, which must have a considerable impact on take-up, particularly if you are competing against copper as well as mobile and wireless. Are they all factored into your assessment?

Mr Chopra—The way we have built this is that the input is the construction cost and the access price. We have assumed that the access price would be $30 a month for fibre to encourage take-up.

Senator MINCHIN—That is the wholesale cost?

Mr Chopra—The wholesale cost would be $30. The output is: how much money does the government needs to put in to allow that pricing to exist?

Senator MINCHIN—Can I ask you about your views on the attractiveness of this proposal to the private sector. The government is indicating it wants up to 49 per cent private equity in this, which would take the government estimate and your outside estimate of $42 billion to around $20 billion of private equity in what is essentially a utility. Do you see that investment demand there?

Mr Chopra—I have not had a chance to look at it from a stockholder perspective. What we have just built is: what does the NBN model look like? We have not assumed that there is an exit by the government at some point in time.

Senator MINCHIN—The government is proposing to exit its 51 per cent after five years, but it is saying in the bill phase that it will be inviting investors to invest up to the equivalent of 49 per cent of the company. Given that this company has to find $42 billion, that is $20 billion in private sector investment that the government will be seeking. To the extent that it cannot find it, it will have to borrow additionally itself. So I am wondering if you have any views on the extent to which this is likely to be attractive to the private investor market.

Mr Chopra—I do not have a view on that, sorry.

Senator MINCHIN—Is it your view that it would be elementary for a project like this that you would undertake a cost-benefit analysis before embarking on investing anywhere between $28 billion and $42 billion?

Mr Chopra—We could expect that a cost-benefit analysis would be undertaken as the construction phase is about to commence. It is my understanding that that would probably occur as the NBN implementation study group comes together, but I have not seen any cost-benefit analysis at this stage.

Senator MINCHIN—The government specifically ruled out doing any cost-benefit analysis. Does that surprise you?

Mr Chopra—No comment.

Senator MINCHIN—Would you expect to see a business case for a project of this kind?

Mr Chopra—We have constructed a business case that we think is around the NBN financials.

Senator MINCHIN—You would describe your analysis as a business case?

Mr Chopra—Yes.

Senator MINCHIN—But you would expect the government, as the principal investor in this, to have done its own and to have released it to the public?

Mr Chopra—Possibly, yes.

Senator MINCHIN—Would it be normal with a project of this kind, particularly if it is seeking private sector investment, to involve the publication of some sort business case, presumably through what would normally be a prospectus or something? Would that be the way it would normally occur?

Mr Chopra—I have not come across previous PPP style arrangements so I am not confident about whether a government would or would not produce the financials around—

Senator MINCHIN—Is your anticipation of take-up based only on what is going on in the US? It is not based on any research in Australia—market research, consumer research—of willingness to purchase higher speeds for what would presumably be some higher price, is it?

Mr Chopra—We have not conducted a consumer study to look at the Australian propensity to purchase higher speed broadband services. I think some of the data collected by the ABS suggests that roughly a quarter of the population currently subscribes to what you would categorise as ADSL2+ type services.

Senator MINCHIN—There is clear evidence that Australians are not purchasing the speeds that are currently available. There is a difference between the speeds that are available and people who are prepared to purchase products that provide those high speeds, so there is a

question mark about the extent to which there is at least residential demand for 100 megabits per second; but you have not seen Australian studies or done any of your own on that question.

Mr Chopra—Yes. We have not seen an Australian study or done our own.

CHAIR—Mr Chopra, is your analysis mainly based on fibre and fibre to the home?

Mr Chopra—That is right. Our study is done on fibre to the home.

CHAIR—To what extent does the provision of wireless and satellite, which the government's policy promises to arguably up to the 10 per cent of Australians who are not able to access their fibre to the home, impact your modelling and your assessment?

Mr Chopra—We have not looked at the costs associated with the last 10 per cent in terms of what the cost of providing them equivalent broadband services might be through wireless or satellite. We have just modelled it for the first 90 per cent.

CHAIR—It is quite an important question, particularly for those who stand to receive or not the wireless and satellite part, but also to the extent that it influences the prospect that the first 90 per cent might be the cheapest and easiest 90 per cent to access. So why did you do your modelling on that basis?

Mr Chopra—We have attempted to look at this from what the impact is on Telstra. The impact on Telstra can be categorised just by looking at the fibre-to-the-home aspect of this. We have not looked at the last 10 per cent of Telstra's customer base.

CHAIR—Okay. Have you looked at consumers? Have you looked at what consumers might have to pay for this wonderful service?

Mr Chopra—We have assumed that the access cost will be around $30, so that is the cost that a Telstra, Optus or AAPT retail might pay to get access to the NBN company, and then they would typically charge a price over and above that.

CHAIR—Have you done any modelling on what might be the price that they would charge over and above?

Mr Chopra—I would assume that the prices would be similar to the prices that occur today. The rationale for that is that currently the price of access is about $30 in the market, so we have assumed that the fibre pricing would be the same as the pricing on copper today.

CHAIR—That is not necessarily an assumption with which other witnesses to this committee and other experts would agree. I presume that you are aware of evidence that consumers could expect to pay two if not three times more than what they are currently paying for, perhaps in some cases, equivalent services and access to what they are able to have today. What do you say to that? Let me ask the question in another way: do you know the access cost for Optus, for example? You are suggesting $30. Do you know the access cost that has been factored in by others doing other computations who have come up with a two-or three-fold family spend for what they are getting today?

Mr Chopra—No, I have not seen what others are assuming in terms of access cost. We presumed that the cost is the same as ULL.

CHAIR—Sorry?

Mr Chopra—The same as the current infrastructure allows. The current infrastructure, which is called ULL, has an average cost in Australia of about $30 a month.

CHAIR—Thank you. Underpinning this policy do you think that the marketplace thinks there is some sort of government reassurance—that the government will do what it needs to do to deliver on this promise? I ask that question in the context of: what do you think that does to the eagerness of stakeholders to signal their intent to invest in the proposal?

Mr Chopra—I think there is reasonable eagerness from the industry to engage on the NBN. From the meetings that we have had amongst the industry players there appears to be reasonable willingness to engage on the NBN, but beyond that I do not expect that anyone has really made a decision yet on the commercial viability of vending assets into the NBN.

CHAIR—If you were a punter in the private sector—forgetting for a moment that you are Deutsche Bank—would you not contemplate holding your fire to see what eventuates from government preparedness and indeed from government or taxpayer funded coffers before you volunteered to put your money where your mouth was? What imperative is there at the moment for the private sector to put their money where their mouth is or to demonstrate their commitment to doing so?

Mr Chopra—I would expect that the next six to nine months is when the industry will start actively engaging to try and understand what the economics of doing a deal or not doing a deal with the government are. We would not expect any deals to be done pre the implementation study being completed.

CHAIR—Perhaps arrangements to be made rather than deals to be done.

Mr Chopra—Exactly, yes.

CHAIR—Do you think that the private sector knows enough—for example, about the regulatory environment—to work out what they might do when, how and at what cost?

Mr Chopra—I would not expect that the private sector would have a view at this stage on what regulatory environment post NBN would appear.

CHAIR—Do you think they are prepared to ask?

Mr Chopra—I would expect that they would be asking.

CHAIR—You do not know so?

Mr Chopra—I would not know, no.

CHAIR—From your experience do you think that the private sector would feel free firstly to ask questions and secondly to voice concerns and perhaps even criticisms in the current environment as the government proceeds?

Mr Chopra—I would not know, sorry.

CHAIR—Okay. Are there any further questions? Mr Chopra, is there anything further you wish to say?

Mr Chopra—That is it, thank you.

CHAIR—Thank you very much for your time and your evidence today.

Proceedings suspended from 3.08 pm to 3.36 pm

BLAIR, Mr Daniel, Telco and Media Analyst, Southern Cross Equities

CHAIR—Welcome. The evidence you are about to give is public and subject to parliamentary privilege. It is an offence and potentially a contempt of the Senate for any party to attempt to interfere with evidence you may otherwise give as it is for a witness to give false or misleading evidence to the committee. If you wish at any stage to provide evidence in private, you should make that request to the committee and we will consider it. Would you like to make an opening statement?

Mr Blair—I will. Good afternoon. Thank you for the opportunity to appear before you today. I will open by saying that we from Southern Cross Equities appear before you to share our observations, from our perspective, as participants in the financial markets. By way of introduction, Southern Cross Equities is an Australian owned institutional stockbroker with offices in Sydney and London. To briefly summarise our submission, we believe the proposed fibre-to-the-home network, the NBN, is not commercially viable, based on our analysis of forecasted return from invested capital. Furthermore, we believe there is limited demand from consumers—firstly, for the speeds being proposed and, secondly, a low propensity by consumers to pay above what they do today. Whilst we acknowledge the long-term validity of the so-called trans-sector benefits, we question the commercial reality of these benefits over the medium term. By that I mean five to 10 years.

Taking the above factors together, we believe it is not a compelling investment to potential investors. Furthermore, we believe the proposed NBN is technology focused when it should, in fact, be consumer-outcome focused. We believe public policy outcomes could be achieved if the focus were on the following: firstly, reforming the deficiencies in the existing regulatory regime and, secondly, intervening in the market where it is uneconomic for the market to provide high-speed broadband. On that note, I conclude my introduction and welcome any questions you may have.

CHAIR—Do you think that a cost-benefit analysis would be prudent in terms of the National Broadband Network and if so why?

Mr Blair—We absolutely do. With an investment of $43 billion, whichever way you look at it and whichever way you structure it in terms of debt equity funding, it makes sense to perform a rigorous cost-benefit analysis.

CHAIR—Have you made that view known through other than your appearance before the committee and the comments that you have provided to this committee?

Mr Blair—We have in our principle responsibility in representing our clients. As you would well know, our clients are institutional fund managers and in presenting our research to them on the basis of the stocks that we cover in the market we have made that known to them.

CHAIR—Have you been able to glean from your clients through that process any insight as to why as a cost-benefit analysis has not been done at this stage?

Mr Blair—It is a good question. It is probably hard to give you the definitive answer. There are a couple of things here. Speaking on behalf of the clients, one is that there is probably a belief that a cost-benefit analysis will come as part of the implementation study. Separately, there is probably a more overwhelming belief that this is a process to bring Telstra to the table to force the right outcome in terms of high-speed broadband for Australia. In that respect, they are waiting for that process to play out.

CHAIR—Your clients are looking forward to the results of the implementation study, then, and the prospect that a cost-benefit analysis might be part of the implementation study. As I understand it, the government announced that the implementation study would kick off in July. At this stage, we do not even know who is going to be boss of the study. What is the view of your clients and the people who you represent on that—firstly, the study writ large? Secondly, what is their confidence about a cost-benefit analysis carried out in the context of the study?

Mr Blair—Just to be clear, I will give you the views of Southern Cross Equities. I am not speaking on behalf of our clients; I am speaking on our behalf. It is a good question. We are expecting some degree of delay to the implementation study. Clearly, as you said, we are already having delays in terms of the appointment of the advisers, the chairman and board members of—

CHAIR—Excuse me, are you expecting delays simply because there have been delays already?

Mr Blair—And further delays.

CHAIR—Why is that?

Mr Blair—The task before the NBN Co. and its advisers of doing the implementation study is a significant one. These things typically do not run on time. It would be fair to say that these types of infrastructure projects typically do not run on time, so we are expecting that it will be April or May of next year before we see any clarity from the implementation study. There is also a question around when the regulatory review will cross paths with this implementation study. I do not think that they are mutually exclusive.

CHAIR—Do you think that would-be participants in the NBN will be able to contemplate what their investment and participation might be unless and until that regulatory review is progressed?

Mr Blair—That is a great question. My gut feeling is no. I just do not think that we have enough information in front of us today for people to develop informed views around on what basis they should participate.

CHAIR—Do you think that they feel confident at this stage to say what they think?

Mr Blair—It depends.

CHAIR—You have been reasonably frank today.

Mr Blair—Yes, I am known for my frankness. But it depends on who you are referring to, Senator. I think there is, for want of putting it a better way, a lot of gaming going on. There are two processes running here—one is a regulatory review and one is the start of the NBN study. If I can talk from the perspective of operators, what a lot of operators, especially outside of Telstra—Telstra's competitors—are looking for is structural change in the industry, so it does work in their favour to support the idea of an NBN if that could lead to structural change through regulatory review that is favourable to them. So I think it makes sense that you would have operators saying that they support it. They do not have to hand over the money or sign the cheque yet, so to speak; but they support it to drive that process of structural change. Clearly that works for them.

CHAIR—They would be silly not to support it, in general, at this stage, wouldn't they? Particularly if they contemplated having a piece of the action as it started to unfold, they would be silly not to support it at this stage, would they not—in the main?

Mr Blair—I think they would certainly be silly not to support it if it were to lead to structural change. There is a separate question around whether they want to put their own capital forward.

CHAIR—To put it another way: they hardly have incentive to criticise it, at this stage—

Mr Blair—Correct.

CHAIR—if they want to see a piece of the action. Indeed, you would be keeping the peace, wouldn't you, rather than risking losing a piece of the action?

Mr Blair—Absolutely. They want to be in the debate. They want to part of the structural change, whether or not they actually end up being a part owner of the NBN. Let's just assume for this moment that an NBN is built. It certainly helps them if there is equivalence of access of high-speed broadband services on a wholesale basis. Equally, it works in their favour if there is some structural change through regulatory reform.

CHAIR—Consistent with your earlier frank comments, you just said—let me not mischaracterise it—'Let's assume an NBN is actually built.' Are you giving some room for moveability of time frames et cetera, based on your initial contention that this plan, as unveiled by the government, is not commercially viable, not commercially feasible? Are you really saying it is a pipe dream—a fibre dream, if you like—and on that basis you therefore expect further leakage, further slippage of time frames because you do not really think this is going to come about in any form?

Mr Blair—Just to be clear: we do not think it is viable from a commercial basis, but something can always be built.

CHAIR—At what price? Sorry, that was rhetorical at this stage!

Mr Blair—If your pockets are deep enough, of course the network can be built. Whether it is going to be commercially successful down the track is another question. You might not want to be the first owner of this asset. It might turn out to be a very good asset longer term. We have seen that with some infrastructure assets. I am not sure whether that answers your question.

CHAIR—There are perhaps many more questions than there are answers, at this stage. Why would would-be investors stake their claims and stake their preparedness to invest at this stage? Why would they not bide their time and see the extent to which the government decides it will have to dip into the taxpayer funded coffers to deliver either some of the infrastructure or access to services or whatever? What is the incentive?

Mr Blair—At the moment, to the best of my knowledge, the only people who have said they would participate are existing operators. Clearly, as I said earlier, it is in their best interests to participate if they believe it will lead to structural change. They do not necessarily have to commit to any funding at this stage. I am certainly not aware of any private equity investors outside of the existing telco, and perhaps broader communications market, that have shown their willingness to invest.

Senator IAN MACDONALD—I noticed in your submission you say you struggle to see how investors will be attracted to this investment opportunity, principally because significant questions exist about the commercial viability to achieve a modest 10 per cent return on investment. I think you said in your opening statement that your clients are mainly institutional investors.

Mr Blair—Correct

Senator IAN MACDONALD—Because you have an office in London, I assume a fair number of your clients are multinational companies.

Mr Blair—The majority of our clients are Australian based. Our office in London, to put it in perspective, is made up of four people. It is reasonably small.

Senator IAN MACDONALD—As a professional adviser, if one of your institutional clients came to you and said, 'I have a heap of money I want to invest,' could you possibly recommend this sort of investment?

Mr Blair—Just to clarify, our clients principally come to us for advice on listed equities. But to answer the question more generally: no, I would not be recommending this investment at this stage.

Senator IAN MACDONALD—You said again in your submission—I guess I am only getting you to repeat what you have already said—that your assessment is that costs would have to double to $200 to $220 from what is now an average of $110 to $120. Where did you get that from? How did you come to that conclusion?

Mr Blair—If we look at the cost inputs, the way that we have derived our analysis is that we take at face value the cost of rolling out the NBN, which is being put forward at $43 billion, and then look at a mix of debt and equity funding—60 per cent debt and 40 per cent equity—with private participation as well government participation. This clarifies a few of the points said in the submission prior to mine. That basically means about $25 million debt and in round numbers about $8 billion of private equity and $8 billion of government equity.

We then look at take-up assumptions of fibre to the home. We are assuming 50 per cent by the end of 10 years, which would pretty much guarantee some pretty significant volumes of both Telstra's traffic and traffic outside Telstra on the network. If we look at an incremental margin of 70 per cent, to maintain a 10 per cent return would require that the wholesale price be somewhere around the $110 mark. If you are a retail provider, you have to make a living. Today's margin levels would suggest around the $200-$220 mark. It is conceivable that perhaps it could be $150, but that would be on very thin margins from a retail provider's perspective and I guess you would have to question whether you wanted to be in business on such slim margins.

Senator IAN MACDONALD—Have you factored in that, as far as we know today, Telstra may continue full steam ahead in their expansion plans in their current business, which I suggest might mean that the bulk of Australian users would opt for a cheaper Telstra's service than a Rolls-Royce but very expensive government service?

Mr Blair—I think that is a very good point. Just to clarify, that analysis that I just described was really a scenario analysis. It is not something we prescribed to. I do not believe personally that you will see 50 per cent take-up unless you have very strong support from Telstra. We just purely have to look at the number of existing customers. Off the top of my head, there are 10.7 million lines in Australia and the vast majority of those are Telstra retail customers. So unless Telstra does support this then you run the very real risk that they will compete alongside. And the copper network can compete alongside the fibre network for a number of years. In effect, you will get a two-tier market. You will get copper at X level and fibre at two times X. If you look at customer propensity and customer research studies, there is not a lot of evidence to support two times X.

Senator IAN MACDONALD—And I assume copper would be sufficient for most.

Mr Blair—I think for a lot of people it would be. The point was made by Senator Minchin in the preceding submission where he said that the available speeds today are not taken up by consumers. To quote the ACMA, based on their analysis, 57 per cent of users are below a megabit and a half. You can get upwards of 24 megabits per second, but let us call it on average 12 megabits. As I am sure you are aware, it is all a function of the condition of the copper and the distance from the exchange and so forth. There is not that propensity of demand for that 12 megabits per second. Some people are demanding it.

Senator IAN MACDONALD—Just by the way as it as an aside, Senator Minchin wanted to be here but he has plane problems, as I understand it. I noticed that in your submission you make the very valid point that an infrastructure project of this size requires very specialised management. I think you are saying, if I read your submission correctly, that there are only a handful of companies that could do that in Australia. Is that the point you are making?

Mr Blair—Absolutely. That is something that I believe. I am an ex-operator myself so I do have some experience in these sorts of projects. Just to summarise that point, a lot of the work in rolling out a fibre network is civil engineering, as you would well know. There are a lot of companies across Australia and across the globe that can do that. There are a lot of companies that can provide the electronics as well that are required in this network. But in any infrastructure project of this scale and complexity it is about bringing all that together. That is

why I referred to the project management aspect of that. There are not too many companies with that expertise across Australia.

Senator IAN MACDONALD—Being a government run thing, we could always turn back and rely on the bureaucrats to run the business—they are brilliant bureaucrats; I am not sure what they would be like at running businesses.

Mr Blair—You could get me to run it but I am not so sure what I would be like either.

Senator IAN MACDONALD—There are rumours around the traps, as you have probably heard, that Mr Switkowski, the former boss of Telstra, is in line. Would someone of his standing—

Senator LUNDY—There is an article in today's newspaper that says he might be in line. I think that is the rumour that Senator Macdonald is referring to.

Senator IAN MACDONALD—I have not read today's papers so I heard it through other sources. I think it has been rumoured in many newspapers.

Senator LUNDY—Does that mean you started the rumour?

Senator IAN MACDONALD—No, but certainly people in the industry have been suggesting this to me. Perhaps, Senator Lundy, you are saying that it is not true.

Senator LUNDY—I am just asking who started the rumour.

CHAIR—If it were to be a person of Mr Switkowski's calibre, how would that go?

Senator IAN MACDONALD—Would somebody like him, not necessarily him, have a chance of pulling it together as a CEO or chairman of the broad of a government company? Or is that an unfair question to be asking you?

Senator LUNDY—Probably.

Mr Blair—Undoubtedly he has a very strong track record as a telco operator, but I am not sure one person is going to be able to deliver this project on their own. I probably cannot comment too much on that.

Senator IAN MACDONALD—You mention in your submission, and I quote:

Further to above—

where you are naming several areas of concern—

this has potential far reaching consequences to Australian households through both their ownership of Telstra shares (1.4m shareholders) and also through Telstra largest shareholder, the Future Fund, which is responsible for the future pension liability of public servants.

Can you just elaborate on that? What are the possible far-reaching consequences that you talk about?

Mr Blair—I think we are just saying there that when there is an intervention in the capital markets, from our position as participants in those markets, obviously it runs the risk of impacting on the market capitalisation of certain companies. Obviously Telstra is the most widely held publicly listed company in Australia, and, outside of that, its largest shareholder is the Future Fund—and its responsibility is to provide for the pension liability of the public sector.

Senator IAN MACDONALD—Just going back to what we were talking about before, you were making an assessment, on what seemed to be well-researched grounds, that the cost would have to double for this to be anywhere near a commercial investment and, more so from your research, that people are not prepared to pay this. I would assume that if you are in the professional business you are in then you would not have to be Einstein to come to those sort of conclusions, would you?

Mr Blair—No, and I do not think we are unique in coming to those conclusions either.

Senator IAN MACDONALD—Surely the government must be getting advice from someone to say, 'Well, look the stockbrokers around Australia and international financial experts are all wrong; it is going to be a good thing.' How could the government come to such a completely different conclusion to the one the finance industry has come to?

Mr Blair—I think there are two types of benefits to be considered here. Obviously if you are looking at it from a private investment point of view then the only benefits you can consider are those that pertain to you as an operator and as an investor. But the second type of commonly referred to or quoted benefits are these so-called transsectoral benefits—that there are overwhelming society and economic benefits in terms of GDP type growth. I can give a couple of examples in terms of e-health initiatives, e-education and so forth. I guess what I would say there is that, although I do not dispute those benefits longer term, my experience is that whenever you ask customers to change behaviour and change the way that they do things in life that does not happen overnight. So whether you are asking them to work from home as opposed to work in the office, whether it is remote schooling as opposed to attending a school or whatever it might be, the benefits take a long time to materialise. Therefore we would question that on a commercial basis, as I said in my opening comments, in terms of the medium term. The timing is obviously very important when you look at investments.

Senator IAN MACDONALD—Certainly, and those other considerations would be very valid if it was a taxpayer funded piece of infrastructure, like a road or the Alice Springs to Darwin railway, for example. But when 49 per cent of the investors are supposedly going to be private investors then, much as they might be altruistic and good corporate citizens, they are in the business to make money not to look to the long-term future of what might be a good idea. So, as a commercial proposition, where is the 49 per cent of the private finance going to come from?

Mr Blair—I think that is a great question. I cannot answer that for you. As I said, when we looked at our analysis—and I used the term scenario analysis—those take-up rates are not what we believe will occur. We looked at it purely from the perspective of what would need to happen for this to be commercially viable and we started scratching our heads.

Senator IAN MACDONALD—Anyhow the witnesses to follow you, who I suspect are behind you at the moment, are from the government so they may be to tell us whether the government looked at those considerations. I will finish on this: can you see any prospect, based on what you know—and not a lot of us know a lot about exactly what is proposed—of getting a 49 per cent private investment into the $43 billion government controlled telco?

Mr Blair—Not on a commercial basis without Telstra's participation.

Senator IAN MACDONALD—Would they do it on any other basis? Are there investors out there who are just full of altruism and do not want money; they are just happy to 'build a nation', so to speak?

Mr Blair—None that I am aware of.

Senator IAN MACDONALD—Thanks, Mr Blair.

CHAIR—Your submission talks about the NBN being technology based rather than outcomes focused. You have possibly touched on it, but tell us a bit more about what you mean by that.

Mr Blair—Sure. From what we have seen in the proposal—and we have mentioned the lack of detail—we are talking about delivering fibre to the home to 90 per cent of Australians, with the remaining 10 per cent delivered by wireless and/or satellite. That is specific technology. If you were to go back even five or 10 years and look at how we use communications and technology to run our lives today, I think you would be quite surprised. We have seen a massive change in the uptake of mobile services and what we do over mobile. It is not just voice these days. What we would argue, going forward and looking out 10 years, is that—and we have to think about this from the consumer perspective—it is not a given that consumers will be consuming content and applications across fixed lines in perhaps the manner that you would need to make the investment stack up.

CHAIR—You talk in your submission about the potential for the NBN to distort the marketplace. You refer to the government intervening in areas where it is currently not commercially viable to afford the private sector to invest in and produce some sort of national broadband network. In that context, can you talk a bit more about your views about the NBN focusing on underserved urban, regional and rural areas and how that might work? For example, are you saying, 'Go where there is nothing,' or are you saying, 'Go, for example, where Telstra already has a stake,' so there may be an overbuild—or both?

Mr Blair—We would recommend that there are two avenues to improve broadband delivery in Australia. One is around reforming deficiencies in the regulatory environment. The other is that, where it is deemed necessary—from a social perspective—to have high-speed broadband and there is not a commercial imperative for the market to deliver that, the government may seek to intervene in some form of subsidy. It could do a number of different things. One might be to subsidise an existing operation. Another might be to set up a separate special-purpose vehicle to invest in those areas. Of course, those options would need to be worked through.

CHAIR—Given the potential scenarios and outcomes, what would be the further consequences of what you say is the potential for the NBN to distort the marketplace?

Mr Blair—The comment that it was distorting was an observation that, if you had national average pricing—the same price across the whole of Australia—there was the potential that in metro areas the price would be artificially high compared to regional areas and that would create a risk. It might be a risk that the market, the government and operators are prepared to bear, but there is nonetheless a risk that an entrant could enter the metro market, the commercially viable market, and underprice NBN Co. Ltd, for argument's sake. Obviously that would have significant impacts on NBN Co. Ltd because it would take high-value customers away from it. There is that risk, but it might be a risk that people are willing to bear. We typically have retail average pricing in Australia today, but we actually have de-averaged wholesale pricing if you look at ULL and LSS services.

CHAIR—What about the government's investment of $250 million in regional backhaul black spots? What do you say of the sufficiency of the plan, as much as we know of it thus far, to address those shortcomings?

Mr Blair—Based on our analysis and our discussions with operators and advisers in the industry our belief is that it is a good start. Based on discussions that we have had we would say that, if you do want to achieve high-speed broadband in some of those regional areas where it is not commercially viable, building out a regional fibre backhaul network would be a logical step, but $250 million is certainly not the number that we come to in those conversations. It is probably a number somewhere between $1 billion and $2 billion, depending on where you go. To my understanding, at this stage only six locations have been announced, and I am not sure how much of the $250 million will be required to deliver to those six locations.

CHAIR—What more should be done, if anything?

Mr Blair—As we have said in the submission, if there is an option to deliver to regional Australia through a regional backhaul network—and I should probably be careful of my phrasing—you could think of it as an OPEL mark 2. It is probably a little bit further reaching than that.

CHAIR—It is clearly rebadged to start with.

Mr Blair—But it gives you a sense of what I am thinking about. I am not intending to join a political debate on that, but delivering high-speed broadband to regional Australia would certainly free up operators to, in effect, expand their footprint. Today the feedback we get from those operators is that it is not commercially viable to operate in parts of regional Australia. The second element in building out an alternative regional backhaul model would be to subsidise last-mile access, which could be through existing copper, wireless or satellite. It would probably be a mix of technologies, and would probably include fibre as well where commercially feasible, to deliver to regional Australians.

CHAIR—I will move to a slightly different issue, one which you have touched on. In making your comments about the challenges the government faces with the realisability of this proposition, to what extent are you factoring in consumer demand? If you are factoring it in a lot, is that premised on your estimates of what will be the cost to the consumer of accessing the NBN as proposed by the government?

Mr Blair—That is a good question. We have not specifically performed any quantitative or qualitative studies around the propensity of take-up or the willingness or demand for speeds. To my knowledge there is actually not a lot of that debate in Australia, but that debate does exist around the globe. In New Zealand, for instance, which I think I reference in my submission, there has been an analysis of willingness to pay more and take-up speed. From memory, in that particular New Zealand research piece from Castalia 65 per cent of consumers would not be willing to pay any more than they currently do for broadband. The other two data points that we would probably look to are, firstly, the ACMA research I mentioned before and other similar research which shows that currently consumers are not taking up available speeds. Secondly, operators—and we talk to operators quite regularly—are saying to us, 'Where you start asking customers to pay more there is no evidence that they are in fact willing to.'

CHAIR—I have one final question around that. We heard earlier today from Dr Gilmore, the Chief Executive Officer of the Australian Institute for Commercialisation. He said words to the effect that it is not clear to him that speeds of 100 megabits per second to 90 per cent of Australia's premises can be justified by demand. He went on to say:

No home in Australia to my knowledge receives its town water direct to its premises through a 1 metre pipe, nor has a freeway terminating at its driveway.

Taking his examples, which are helpfully graphic, even if a freeway were delivered to your driveway free of charge and even if you had the option of having town water direct to your home for no charge, using those analogies, are they things that consumers would take up simply if there were cost equivalence? Translating that to the NBN, even if the NBN is delivered at a price comparable to today, which you are suggesting it will not be, in your view do consumers want speeds of up to 100 megabits a second?

Mr Blair—In our view there is not a demand for 100 megabits per second. If you offer someone something for free they will probably take it up.

CHAIR—Yes, but will you use it? You do not necessarily use it; you might say yes and then—

Mr Blair—It is pretty hard to see how you are going to use 100 megabits per second today. If you look across the range of different services and applications that run you struggle to get above 20 or 30 megabits per second. I am certainly no technical expert in that area, but when you look at the evidence that exists you have got to understand the cost of moving from copper to fibre for the consumer, because it may include rewiring the home and it may include providing battery backup to the equipment that terminates outside your house. The very idea that the NBN Co. Ltd or someone else provides 100 megabits per second to your door does not mean that it is free to the consumer.

CHAIR—Indeed. I have a final follow-up question to the answer you gave before: do you want to reflect on New Zealand having free dial-up access and the potential impact for that on a cost differential.

Mr Blair—In what respect?

CHAIR—Arguably, if you had free dial-up access as, as I understand it, there is in New Zealand, the cost differential between today and tomorrow under an NBN would be far greater.

Mr Blair—In New Zealand?

CHAIR—Yes. So if you translated that to Australia, what—

Mr Blair—You would probably say that in New Zealand the retail broadband services are more expensive.

CHAIR—Thank you very much, Mr Blair, for your time and your appearance before the committee.

Mr Blair—You are welcome. Thank you.

[4.21 pm]

HEAZLETT, Mr Mark, Assistant Secretary, National Broadband Network Implementation, Department of Broadband, Communications and the Digital Economy

KELLEHER, Mr Brian, Assistant Secretary, Priority Backhaul Implementation, Department of Broadband, Communications and the Digital Economy

LYONS, Mr Colin, Acting Secretary, Department of Broadband, Communications and the Digital Economy

SPENCE, Ms Pip, First Assistant Secretary, Networks Policy and Regulation, Department of Broadband, Communications and the Digital Economy

WINDEYER, Mr Richard, Acting First Assistant Secretary, National Broadband Network Strategic Policy, Department of Broadband, Communications and the Digital Economy

CHAIR—Lady and gentlemen, as you would be aware the proceedings before the committee are public. You are protected by parliamentary privilege. I presume you aware of the potential breaches of laws and contempt of Senate arising from attempts to interfere with evidence that you may give to the committee and the prospect of giving false or misleading evidence to the committee. If at any stage you wish to give evidence in private, please make that request known to us and we will consider it. Would you care to make an opening statement, Mr Lyons?

Mr Lyons—No, I am happy just to try and assist the committee if you have particular questions.

CHAIR—One moment.

Senator IAN MACDONALD—The first question would be: do we really know more than we have read in the papers about what exactly is being proposed? Asking you what we know is perhaps not an appropriate question. Could you perhaps give us a summary—very briefly, in the circumstances; I guess you could go on for hours—of what we as the public currently know about what is proposed. I am not sure that we ever had that—

Mr Lyons—I am happy to provide a brief conceptual outline and then to answer any further questions. Some of this will repeat what you know. The government has announced that it is going to establish a company to invest in a high-speed national broadband network. It has announced that the company will invest up to $43 billion in that network. It has announced that it is looking to attract private investment in the network. It has announced that it will retain at least 51 per cent ownership stake in the company so there will be a maximum of 49 per cent private investment. The government expects that it will take eight years to roll out the network and that after a further five years it would be seeking to fully dispose of its interests in the company. The government has indicated that it intends it to be a wholesale only company, so it will not be operating in the retail market. To preserve the integrity of that wholesale only

decision the government will be looking to impose appropriate caps on private investment, particularly by telcos.

Senator IAN MACDONALD—That is after the five years, when they—

Mr Lyons—No. It would establish caps on private investment that would be ongoing, but they would be established before any private investment into the company. In the interim phase before it fully privatises, the government would accept up to 49 per cent of private investment. That 49 per cent would itself be subject to appropriate caps. The government has indicated that the up to $43 billion investment is based upon preliminary estimates. It has indicated that its objective is to have 90 per cent fibre coverage of the network, with the remaining 10 per cent served by a mix of wireless and satellite technologies. It has indicated that it recognises there are a number of difficult issues to be worked through in that process and that it would embark upon an implementation study that would report very early next year on a range of commercial, technical, legal and policy issues, all of which are very much interrelated and some of which, I understand, you would have been discussing before the committee.

CHAIR—'Very early next year'—is that still contemplated to be February 2010?

Mr Lyons—Yes, February next year.

CHAIR—In terms of the implementation study, if I may interject just there, was it not contemplated that that would start in early July—earlier this month?

Mr Lyons—Yes. We are embarking on the implementation study. Part of that process of the implementation study is to appoint a lead adviser.

CHAIR—Do we have one yet?

Mr Lyons—We are in that process. The decision has not been made or announced at this particular point in time.

CHAIR—Where is the process of the decision making at, given that you cannot start an implementation study in early July if you have not got someone to do the gig or dance the dance yet?

Mr Lyons—It is at the final stages of decision.

CHAIR—What does that mean? Can you give us any more detail?

Mr Lyons—No, not particularly.

Senator IAN MACDONALD—Is the leader going to be a man with a name that is difficult to spell?

Mr Lyons—I suppose what I should have said parallel to that is that we are seeking a lead adviser—and there will be subordinate advisers as well—to provide advice on this range of commercial issues, but at the same time the government has established NBN, a company that is

at the moment 100 per cent Commonwealth owned, of course. Currently the directors of that company are Commonwealth officials because it is in the interim phase. The government is looking to decide upon the establishment of the full independent board of independent directors of the company and the government is in the process of making those decisions. They are decisions to be made and announced by the government in terms of the board.

CHAIR—Will the implementation study be overseen by an interdepartmental group?

Mr Lyons—There will be groups of officials that will be working together with this process. You would expect that the Department of Finance and Deregulation, Treasury and the Department of the Prime Minister and Cabinet will be consulted and there will be working group arrangements. But the direct contractual arrangements for managing the lead adviser for the implementation study rest with the Department of Broadband, Communications and the Digital Economy. You would also expect that the department of finance would be closely consulted in this process, because the anticipation is that the minister for finance would be a joint shareholder minister, along with our minister, of the company.

CHAIR—Are you saying that your department will essentially be the administrative and managerial boss of the implementation study?

Mr Lyons—Yes—of the advisers, and those advisers are providing a report to the government on a range of issues.

CHAIR—There is clearly a prospect, particularly given some of the evidence we have heard today, that the implementation study could come back and say: 'This is a pipe dream. This is a fibre dream. It is impossible to deliver.' What then?

Mr Lyons—There are a range of commercial and technical issues to be looked at. I am not going to speculate on the outcome of the implementation study report to government.

CHAIR—Stakeholders and potential stakeholders are entitled to be relying to quite a degree on the progress of the outcome of the implementation study, particularly given that Minister Conroy, for example, has said, 'Therein lies the cost-benefit analysis.' Some of the very first indicia stand to be delivered and opined upon by the implementation study. What are the implications and ramifications of that understandable reliance by would-be stakeholders on the implementation study?

Mr Lyons—First of all, there are a number of key stakeholders, but clearly one of the key stakeholders is the company itself, so we expect that the company, as the board gets announced and it starts to recruit staff et cetera, will be very closely involved in the implementation study. Secondly, one of the key aspects of the role of the lead advisor is to engage with industry and affected stakeholders on these issues. There will be a range of parties out there that will be seeking to talk to government on commercial issues. There will be a range of parties out there that will potentially be seeking access to this network. I know the Communications Alliance is looking at a range of standards-making and other issues where it would want the industry to work together to the industry's mutual benefit, and we strongly encourage them to do that. And people involved in the implementation study will want to get out there and talk to industry and to these participants on a range of issues.

CHAIR—Returning to the cost-benefit analysis that Minister Conroy has spoken about in the context of the implementation study, will that be conducted as part of the implementation study or has the decision been taken that, almost irrespective of the risks and the costs, the National Broadband Network will proceed?

Mr Lyons—The government has made a commitment and it sees that having a high-speed national broadband network using fibre and other next-generation technologies is going to deliver a significant economic and social benefit to Australia, but I think it also recognises—

CHAIR—That is what it says.

Mr Lyons—and that is the government's commitment—that there are a number of detailed issues that need to be worked through. They include looking at the costs of deployment of the network and the sorts of services that would be offered and provided by the company. There have also been a range of business, technical and commercial issues raised, like demand, take-up and the best ways to attract private investment. Those issues will all be looked at in terms of the best way of implementing the government's commitment.

CHAIR—If I may, that begs the question—because you are saying it will look at the best way of implementing the government's commitment, which is another way of saying the government is going to find a way, come hell or high water, to implement its commitment—will a cost-benefit analysis of the government's commitment be done, warts and all, as part of this implementation study?

Mr Lyons—There will certainly be an independent, multidisciplinary set of commercial, technical and legal advice. It is going to be objective advice and it is going to inform government. It is not going to be people necessarily saying: 'What does the government want to hear? Let's provide them with that advice.' It is going to be a comprehensive implementation study, and the reputation of the advisers that we appoint and the department will rest upon it.

CHAIR—Will it be a precondition of the cost-benefit analysis in the implementation study that the government's promise will be implemented and will it be a precondition of the cost-benefit analysis to find a way through to deliver the government's promise—at least risk and at least damage but, nonetheless, to deliver the government's promise? Is it going to be a case of, 'Build it and they will come'?

Mr Lyons—Issues such as, once this high-speed infrastructure is available, what the demand will be, what the prices will be, what services will be offered, how the services might increase over time and how demand might increase over time will be looked at objectively and the government will get objective advice.

CHAIR—Will that objective advice contemplate two scenarios at least—for example, one with Telstra and one without Telstra?

Mr Lyons—I would not want to go into the details of the issues that will be looked at, but clearly—

CHAIR—They are both clearly options.

Mr Lyons—Clearly there are scenarios, and clearly a range of scenarios would be looked at by advisors, but I would not want to comment on particular scenarios. The government has indicated that it wants to seek private investment and potential participation by a range of players in the industry, and Telstra is clearly one of those players, but I do not think the government has indicated that it wants to only speak to one side of the industry.

CHAIR—If I can move to the Tasmanian rollout for a moment, it is my understanding that the contemplation is that in Tasmania about 80 per cent of the rollout will comprise aerial cables.

Mr Lyons—I do not think there has been any particular decision or announcement made about that. I do not think those details have been determined. I am not sure on what basis you are—

CHAIR—Let me ask it another way: what is the contemplation, in terms of the Tasmanian rollout, of the composition of aerial versus other?

Mr Lyons—I do not think the final decisions on the proportion have been made. I think the general principle is that the government will be looking to place cable underground where that is cost-effective and practicable to do so. But, until the full rollout agreement is determined, we will not be in a position to provide any further details on the proportion of overhead and underground cabling.

CHAIR—All right; thank you. In respect of the Tasmanian rollout, there has been some speculation that the Tasmanian NBN company will be at least part owned by NBN Co. Ltd; is that right?

Mr Lyons—Yes, the company is intended to be a subsidiary of NBN Co. Ltd.

CHAIR—On what basis has that decision been able to be taken, given that, as I understand it, there is not yet a board or, as you have said, a chairman of NBN Co. Ltd? On what basis could that decision have been taken already?

Mr Lyons—The government has made the policy decision that it is the sole shareholder in NBN Co. Ltd and that the partner for delivering the outcome in Tasmania is Aurora Energy. Negotiations have been held with the Tasmanian government and with Aurora Energy. It was considered that the best vehicle for implementing the Tasmanian rollout would be through an arrangement with an entity with the scope for participation and appropriate contribution to that investment.

CHAIR—Given that we have kind of put our toe in the water with the Tasmanian NBN Co. and part ownership, when will the structure and the role of the Tasmanian NBN Co. and the details of its governance be made available to the Australian people?

Mr Lyons—The government has indicated that it intends to make those announcements shortly. Those announcements and timing of them are a matter for the government.

CHAIR—I have one more question on the Tasmanian roll out. Returning to the aerial cable component of the Tasmanian roll out, it is my understanding that the tender documents

contemplate the aerial roll out portion as being bigger than the non-aerial portion. Is that a misunderstanding or a misreading?

Mr Lyons—Perhaps the contextual explanation may assist. You are correct. Aurora Energy released a tender for fibre-optic cable. The majority of the fibre-optic cable called for in that particular tender is overhead cable that will be used for backhaul purposes in the stage 1 roll out. The government has indicated that there will be a stage 1 roll out as part of the Tasmanian process. The backhaul will be fibre-optic transmission links that will be run on poles along highways to regional areas, with a limited impact on visual amenity. The bulk of the cable associated with that particular tender will not be installed in built-up residential areas.

CHAIR—Okay. Thank you.

Senator IAN MACDONALD—The financial papers and any number of financial experts, including witnesses who have given evidence to this committee directly, suggest to us that there is just no way possible that private investors would be interested in the 49 per cent on the information that is currently known. Clearly, the government must have had information before it made a decision on the prospects of getting equity financing. Can you tell us what financial information the government relied upon in announcing that it was going get up to 49 per cent private equity investment?

Mr Lyons—The government has indicated that it is seeking private equity investment. It has indicated that it wants the implementation study to inform it of the best way of seeking private sector investment. Since the government's announcement, there has been, as the minister has already indicated, a fair degree of interest expressed by telecommunications companies in potentially participating or investing in the network. An implementation study is the best way to look at that process so as to get informed advice to government. My understanding is that there has been a range of different views expressed upon the extent to which private investment might be attracted. I understand that there are people who have expressed views one way but I understand that there is a range of different views. The implementation study is the appropriate forum in which to test those views and it is appropriate to have someone appointed by the government who can go out there and have those discussions and undertake that detailed and independent analysis on behalf of the government.

Senator IAN MACDONALD—I am not terribly clever and I certainly do not understand the world of high finance, but you do not have to be terribly astute to work out that on the figures it is simply not an economic proposition in spite of what you say. Yes, there have been comments about telcos getting involved, but they would only be interested if there is something in it for them, and clearly it is not a return on a financial investment. There would have to be some deal struck to in some way involve them or issue shares in lieu of confiscated assets or something, on which they may have no option or little option.

I come back to my question: what advice did the government rely upon in floating this proposition? Again, you say there are different views. Quite frankly, I have only seen comments without malice and without any particular barrow to push, but it just does not stack up. Perhaps you could tell us how the advice was given. I suspect you will not tell me what the advice was.

Mr Heazlett—The government made an announcement based on preliminary estimates of the cost of building a network. In the context of that, it indicated an objective for the network to operate on a commercial basis. In conjunction with that, it would seek to attract private investment. That does not include, as is clear from the various comments the minister has made since the announcement, that there is any detailed financial analysis that supports a business case one way or the other in relation to the operation of the network. The sort of advice you are asking about would constitute that detailed balance-sheet advice that the minister has quite clearly stated the government had not sought at the time of its announcement.

Senator IAN MACDONALD—The minister did not just wake up one morning and say, as he was having a shower in the morning, 'Let's pick a figure. $43 million is what it will cost and, yes, this is how we're going to pay for it.' He must have got advice from the department or, if not the department—and that is the basis of my question—who? I am not asking about the terms of the advice. Perhaps let me be more direct: did the department give advice to the minister on the ways of being able to fund this proposal? I will hold myself back from saying 'ridiculous proposal'.

Mr Heazlett—The department has provided advice to the minister and the government in relation to preliminary estimates of the cost of building the network. In relation to the sources of that funding, that advice comes from a combination of sources available to government in setting budgets and in determining these things. So there is involvement by the Department of Finance and Deregulation and the Treasury. Clearly, the government has set aside funds for the funding of the infrastructure projects and the Building Australia Fund.

Senator IAN MACDONALD—That is the 51 per cent. If they want to put their infrastructure money into that, that is a decision for them. It is the up to 49 per cent that I am interested in. Do not take us on a different tangent. I accept the 51 per cent, but I take it from what you are saying that your department was not asked for advice and did not give advice on the way that it would be paid for.

Mr Heazlett—That is one of the aspects of the project that is subject to careful examination as part of the implementation—

Senator IAN MACDONALD—Come on, Mr Heazlett. That is very well answered, but I really want an answer to my question. I understand you have a responsibility to the government of the day, but that response does not answer my question.

Mr Lyons—This might be repeating things, but the government has never said, to my knowledge, that a comprehensive business case had been completed before it made its announcement. It made its announcement on the basis of what it believed to be the social and economic benefits from the project and from its understanding of preliminary cost estimates, and that it wanted the commercial issues, including ways of attracting private investment of up to 49 per cent, to be worked through as part of an implementation study.

Senator IAN MACDONALD—Again I am not asking you to defend the minister's announcement; I am only seeking from you as professional public servants what you gave and what you did not. Quite frankly, you can tell the minister what it might cost as a government funded infrastructure project but the minister got up and said, 'We are only spending 51 per cent

of $43 billion because someone else is going to pay for it.' As much as I find the minister's company always pleasant, I would not put him in the league of international financiers who could be having a shower and decide that the 49 per cent is doable. I am asking if it were your department. If you are telling me that it was Treasury and Finance, that no doubt will be something that my colleagues in estimates committees will pursue. All I am asking of you is: did you give advice? And I understand you to say no.

Mr Lyons—What we are saying is that there was no concluded business case. That level of comprehensive analysis that you are talking about is actually the subject of an implementation study.

Senator IAN MACDONALD—Did the advice not to give advice on the private equity funding but to get it from an implementation study come from the department?

Mr Lyons—I do not want to reveal the nature and the content of advice—

Senator IAN MACDONALD—No, and I don't want to ask you either.

Mr Lyons—but clearly the department and other departments did provide advice to the government on how best to implement the policy framework and an implementation study provides the opportunity for having not only an independent advisory process but also a way of engaging with participants and industry on a range of very complex and interrelated issues that cannot be considered in isolation to come up with the best and most comprehensive answer.

Senator IAN MACDONALD—I understand that your department did not give advice on how the 49 per cent would be raised—and correct me if I am wrong. You have seen obviously the newspaper reports and evidence given to this committee that to get any sort of commercial return costs would have to at least double—and I have had other people tell me that even doubling is a ridiculously small amount. You have heard those assessments. Did you look into those? Have you got contrary advice to that?

Mr Lyons—We are aware that there are a range of variables, but what the price to consumers would need to be is going to depend upon the costs of the network, the extent to which existing infrastructure can be used as part of the network, the sorts of services that the wholesale only operator is going to provide, the level of functionality that will be in that service offering for retail providers, the demand for different types of services at different structures and different levels, and the extent to which demand will increase over time during the roll out of the network. We know there is increasing demand for bandwidth from consumers. We know that the demand people have for Internet now is significantly higher than it was eight years ago and we know it is going to increase significantly. Those are the interrelated issues that I referred to that are going to be looked at as part of the implementation study.

Senator IAN MACDONALD—That is all very true, Mr Lyons, but the figures that are noncontestable, as I understand it, are $43 billion and 51 per cent.

Mr Lyons—I would say that about the $43 billion. The government has indicated that the company will invest up to $43 billion based upon preliminary estimates. There is a contingency in that. That is exactly one of the issues that will need to be worked through as part of the

implementation study: the cost of the fibre, the wireless and the satellite deployments and the extent to which the existing infrastructure—backhaul and other local infrastructure—can be part of that equation.

Senator IAN MACDONALD—We are all hoping that for the first time ever an assessment on infrastructure spending will be high rather than low. I appreciate that it is still to be done, but whether it is $43 billion, $40 billion or $35 billion, the up-to-51 per cent government ownership and the rest—which comes from somewhere; it is not going to be given philanthropically, I assume—needs to get a return.

Mr Lyons—By the way it is not a minimum of 49 per cent private investment; it is a maximum of 49 per cent.

Senator IAN MACDONALD—Yes; it might be less than that. I asked you about whether you had done any different figures on the cost that might need to be proposed to get a 10 per cent return on investment, at least for the private investors—forgetting about the government investors—but let me ask you this: have you done any work, surveys or polling, on whether the majority of users in Australia are price conscious? Do they go where they go principally for price or is price the secondary consideration? I guess the question is, first of all: have you done any assessments on that?

Mr Windeyer—No, we have not.

Senator IAN MACDONALD—Okay. What do you say to public comment—and, again, evidence given to this committee—that the majority of users will go according to the money they pay? Are you in a position to reject that or to give a different view? I do not suppose you are in that position if you have done no work on it.

Mr Lyons—What do you mean when you say that they will go according to the money they pay?

Senator IAN MACDONALD—It is a price sensitive business. People now, as I understand it—I am no expert—can get a much wider bandwidth if they are prepared to pay but most people go for the cheapest option, which is a narrower bandwidth, because most of them do not need a very wide bandwidth.

Mr Windeyer—I do not know that I want to make any comment on what consumers might or might not have said in surveys that people have undertaken. I would point out that I think there are possibly other factors that come into play, one of which is that for any particular type of service at a particular bandwidth there may well be decisions that people make that go to the quality or reliability of the service or the nature of the service offered rather than, solely, the monthly price figure.

Senator IAN MACDONALD—Universities, teaching institutions, health institutions, hospitals and very big corporate businesses may require a huge bandwidth and be prepared to pay for it but I suggest to you that the majority of users of the NBN will be—I hate the term—'ordinary Australians'. Again, the comment from those who seem to know is that unless they are

going to be downloading three-dimensional videos every minute, they would stick with the one megabit speed that they can get cheaply, and will continue to do that.

Mr Heazlett—While we have not undertaken ourselves any polling or examination of what consumers are intending to do, it is fair to say that we have seen some studies that other people have done, and the observation that I think should be made is that it is not a static position, that the position that exists now is different to that which existed 12 months ago and that there has been an increasing tendency for people to move up the bandwidth scale. One of the issues that would need to be looked at in more detail in the implementation study is the nature of that move and the drivers of that move and what implications it has for the structuring of how the company operates.

Senator IAN MACDONALD—This is what I do not understand about it. You have made an announcement—'We're going to do it; we've set some money targets; we've set some investment targets'—and then you are having an implementation study to see whether it will all work. What if the implementation study comes out and says that you will have to charge four times what they are currently paying, not just twice? What is the fallback position? What is the fallback position if you cannot do a deal with the telcos and they say, 'We're out,' and the institutional investors say, 'Much as we love Australia, we're in this business to make money and we won't make it out of this'? What is the fallback?

Mr Lyons—I would not want to speculate on what the outcome of the study would be. The government has made a commitment that the company has been established for that purpose. It clearly sees the significant economic and social benefits from undertaking this and it believes in it, so I think we would want to wait until we had worked through the implementation study before we made any sort of speculation about what might happen if a particular scenario were to come through.

Senator IAN MACDONALD—But an implementation study is—

CHAIR—'We're going to do this.'

Senator IAN MACDONALD—'We're going to do this. This is where we're going to put a tower and this is who we're going to appoint to be in charge—but, hang on, we ain't got no money.' When the private investors can be up to 49 per cent, I suppose that means that the government could end up funding it 100 per cent, on the rules.

Mr Lyons—Yes.

Senator IAN MACDONALD—That is a yes?

Mr Lyons—That is an option that is open for government.

Senator IAN MACDONALD—All right. The chair is giving me the evil eye.

CHAIR—Not at all, Senator Macdonald. Did the department contemplate a scoping study rather than an implementation study? Is there a difference? I would have thought so.

Mr Lyons—In some cases, a scoping study might be undertaken before any policy decisions are made.

CHAIR—One would have thought so. Was a scoping study undertaken?

Mr Lyons—No. The government has indicated that it ran a process for fibre to the node, that it did not get any proposals that constituted value from money, that some of the learnings that it got from that were that a fibre-to-the-node deployment was not necessarily the most efficient way of delivering on the outcome that it wanted, which was a future-proof high-speed broadband, and that the capital cost of fibre-to-the-node deployment would perhaps have delayed the eventual path of fibre to the home. It also wanted to address structural issues in the industry by setting up a wholesale-only network. Those things informed and drove the policy framework which the government announced, which it committed to, and we are now embarking on the implementation study on the best way to implement it.

CHAIR—There is every prospect that many of the same things that led to the government choosing to abort NBN round 1 in April this year may lead to the same result this time. It seems that you are essentially confirming that there is no genuine or credible basis for the government's decision to proceed with fibre to the home for 90 per cent of the population.

Mr Lyons—There is a very firm policy basis that the government has come to. What I am perhaps not prepared to do is to—

CHAIR—No credible or empirical or cost-benefit basis.

Mr Lyons—There were estimates made of the costs of the rollout based on upon technical and financial advice that was available to the Commonwealth on the cost of a fibre deployment.

CHAIR—But devoid of likely consumer take-up, for example.

Mr Lyons—And the government has embarked on an implementation study to work through those issues. What I am not prepared to do is to speculate about particular scenarios that might come from the implementation study.

CHAIR—Thank you. Can I return to Tasmania, so to speak. When is it contemplated that the Tasmanian phase of the NBN will be live?

Mr Lyons—The government has indicated that that will be announced shortly, so I will leave it for government to make those announcements.

CHAIR—If the Tasmanian government's proposal was considered comprehensive enough to be, if you like, the first phase of the NBN prior to the results of the implementation study being known, why doesn't the government just get over it and get on with it and say, 'We're going first in Tasmania but it's going to be the same for the rest of the country'? Why is it not a template, essentially?

Mr Lyons—The government built upon the Tasmanian proposal and indicated, I think, in its announcement that, in the light of the Tasmanian proposal, it was entering into negotiations with

the Tasmanian government. The scope of what the government wants in Tasmania is bigger than the scope of the original proposal from Tasmania. There are ongoing negotiations and the government believes that Tasmania is a good starting point for the network in the light of an existing proposal, but that is not to say there needed to be proper commercial negotiations between the Commonwealth on the one hand and the Tasmanian government and Aurora on the other. Those negotiations have been undertaken and I will leave it to the government to make any announcements about the conclusion of them.

CHAIR—Have those negotiations countenanced the extent to which the design, governance and operations of the Tasmanian rollout will be compatible or not with the NBN on the mainland?

Mr Lyons—They have certainly addressed those issues. A memorandum of understanding was entered into between the Commonwealth and the Tasmanian government on the principles and processes and how the parties will work together for deployment of the National Broadband Network in Tasmania. It sets out commercial principles that will drive the finalised agreement and certain principles in relation to the governance of the company that will be established as the vehicle for the rollout in Tasmania. But the details of that MOU are commercial and I do not have that information available.

CHAIR—Thank you. Given the relative imminence of the rollout in Tasmania, what is the expectation about wholesale prices, what can Tasmanian consumers expect to have to pay and when will they be told?

Mr Lyons—That will be a matter for announcement at the appropriate time. The agreement will deal with those issues, but the general principle will be that Tasmania will be part of the National Broadband Network. As such, it will appropriately be a part of the national pricing that will need to be worked through for the network and that network will also be subject to regulation by the ACCC in terms of its pricing. It will need to complement and be part of the National Broadband Network, but it will need to also be starting up with some access pricing to drive it forward.

CHAIR—When will we know how much?

Mr Lyons—That is wholesale prices. There will, of course, need to be decisions made on the retail prices. That will be a decision for the retail providers. I am not in a position to announce anything; that is a matter for the government to announce.

CHAIR—I have a couple of questions about regional backhaul, but we have gone over time. I thank the officers for remaining; are you prepared to stay till a quarter past five?

Mr Lyons—Sure.

CHAIR—Thank you. Regarding the backhaul black spot program and the six locations announced recently by the government for that program, does Telstra have capacity in each of those locations?

Mr Lyons—Yes.

CHAIR—What has been done to ensure that the government's plans will not essentially amount to an overbuild on top of what Telstra can already do—an unnecessary overbuild in this context?

Mr Kelleher—There are two parts to my answer. First, government's interest in this program is to deliver competitive infrastructure into the locations. It sees that that is an important element to achieving service outcomes for business and residential users in those locations. Evidence provided through the consultation process and collected by the Glasson review and other reviews pointed to the obstacle of backhaul as a major impediment to delivering competitive services in those communities. I think the previous speaker at the table also indicated that that was presenting an issue for commercial service providers to deliver new services and increase their footprint into regional Australia. I am talking to the government's objective there.

The second point I wanted to touch on is the particular route that this infrastructure would follow to that location. The government has nominated six priority locations. The RFT that has been issued leaves it open to tenderers to propose the route that the infrastructure will take to that location. The tender encourages through the selection criteria the tenderers to look to locations that are not served by alternative infrastructure and to address those locations.

CHAIR—So would the tender allow for Telstra, for example, to vend some of its unused capacity?

Mr Kelleher—The tender does not allow for that.

CHAIR—Why not? Would not that have potentially been some sort of common sense outcome, in some respects, in some places?

Mr Kelleher—In terms of the objective of the program, the government has taken the view that, to deliver short- to medium-term outcomes to the communities, funding alternative competitive infrastructure will deliver a sustainable outcome.

CHAIR—So bringing on a fight is quicker than progressing what you already have—is that it?

Mr Kelleher—I am sorry: I do not understand the question.

CHAIR—You are suggesting, if I understand correctly, that bringing in competition to do some of what is already there arguably in terms of infrastructure the government says is better than providing an opportunity for a bid to be made about building on things that are already there by someone like Telstra in this case.

Mr Kelleher—The government has made a decision to address service outcomes to those regional communities. Investing in alternative infrastructure is going to deliver a good outcome. I guess it would be useful also to point to what is in the marketplace at the moment where there is alternative backbone infrastructure into locations and that does, from a consultation process we have stepped through, provide evidence of that leading to price reductions.

Mr Lyons—It would encourage retail competitors to come into those towns and provide internet services.

CHAIR—It still seems to just close off even the avenue for Telstra to contemplate vending some of its existing assets. I have one further question about regional backhaul. The town of Mount Gambier in my home state of South Australia was on the minister's priority list in April, yet Mount Gambier is not part of the final list. My understanding is that NextGen has, in any event, already rolled out some additional capacity into Mount Gambier, but why was Mount Gambier on the April list and not on the final list?

Mr Lyons—I will ask Brian to add to this, but my understanding is that Mt Gambier was part of an indicative list, not a priority list, that the minister indicated of locations where there was not competitive backhaul. The final locations were selected with consideration of more than 60 submissions. The short list was based upon the extent to which the location was already served by competitive optical fibre lengths, the potential population that would benefit, the likelihood of getting service outcomes in those markets if you did proceed in those areas and the extent of fibre backbone. If it were to be deployed without government assistance, then it would not be appropriate for the government to fund it. First of all, it was an indicative list; secondly, there was a more exhaustive analysis undertaken. Submissions were received, there was short listing and a priority of decisions was made.

Mr Kelleher—There is another point. The government has said, in announcing the first six locations, that this is the first six and then it would consider further locations, depending on allocated funds.

Mr Lyons—The other point I was supposed to make in terms of some of the previous testimony on this issue that I heard when I was in the room is that this is not the government saying that this is the backhaul for the national broadband network; this is a targeted program to deliver both an economic stimulus and service outcomes to communities. It would then become part of the national broadband network, but by no means is it the backhaul solution for the national broadband network. The national broadband network company itself would need to establish a backhaul network. This is simply a start, not the end of that network.

Senator IAN MACDONALD—I have two very quick questions. Is legislation required to set up NBN Co. Ltd?

Mr Lyons—No. NBN Co. Ltd has been established under the corporations law as a Commonwealth owned company. At the moment, as I said, it has officials as shareholders. The legislation that is required is legislation to regulate NBN Co. It is not for it to exist as a private entity. The government has indicated that it wants to provide confidence to investors, legislate the rules for caps on private investment and declare what those rules are so that they are well known, fixed in legislation and there is certainty for potential investors. It also wants to provide public confidence that, when NBN Co. is established, it is not going to turn into an unregulated monopoly. In fact, it will be subject to ACCC oversight from the outset. The legislation is subject to scrutiny by the independent regulator from the day it starts to roll out its services.

Senator IAN MACDONALD—That is interesting. Bearing in mind the questions I was asking you about what people will pay and what sort of private investment this will be, there is

nothing in the proposal announced by the government that in any way suggests that Telstra, Optus or anyone else will be unable to continue an operation and compete with NBN?

Mr Lyons—No, there was nothing of that kind in the announcement.

Senator IAN MACDONALD—In the advice given by the department to the government, did you take into account the fact that Telstra, which has practically a nation-wide network now, certainly amongst the major centres, would continue to operate and be a market competitor with the government?

Mr Lyons—Yes, at two levels: in terms of it being a relevant issue for the implementation of the study and the extent to which Telstra or other telco operators want to participate—in assets or with equity. All those issues were clearly issues to work through as part of the implementation study.

Senator IAN MACDONALD—Or they could stay outside and keep running their business in competition.

Mr Lyons—Yes. I suppose the second recognised aspect of that was that the government wanted to get the regulation settings right for competition in the industry in the transition of the National Broadband Network. So, while the network was being established and rolled out, the government wanted to establish appropriate regulation, including addressing a number of issues relating to Telstra's dominance of the market and concerns about how effective the competition regime had been.

Senator IAN MACDONALD—I do not want this to be hypothetical, but it is not inconceivable that we could end up with a government owned national broadband network competing against an existing network operated by Telstra?

Mr Lyons—That is correct; it is not inconceivable.

CHAIR—If I may, I will place a question on notice, and you might then indicate by when you will be able to answer it. With the first round, if you like, the participants in the RFP were subject to a commercial-in-confidence situation. Looking at the various balls that have progressively been thrown in the air in implementing the government's policies thus far, are you able to provide the committee with—for example, in tabulated form—a summary of which stakeholder groupings are subject to commercial-in-confidence arrangements or formal arrangements that prevent them from speaking outside the process in which they are participating? For example, I presume that may be the case for any parties attempting to participate in the various tenders that are underway—perhaps some of those would be participants in the implementation study.

Mr Lyons—The government is not conducting the equivalent of a procurement exercise, so there are not the same sorts of issues in terms of opponents putting in proposals. At the same time, people out there who may be interested in participating in NBN Co. or vending in assets or equity et cetera will be subject to appropriate commercial discussions between the Commonwealth and the parties and, just as those parties probably would not want to reveal their commercial negotiating position publicly—and that is their right to do so—the Commonwealth

would similarly want to preserve its negotiating position and its understanding of costs and those sorts of issues in that process. I do not think either side of the equation would want to reveal commercially sensitive information.

CHAIR—My question is: are you able to provide the committee with a description, or a summary, of each of those processes that are currently in play?

Mr Lyons—Do you mean the—

CHAIR—They will inevitably move over time.

Mr Lyons—Yes, we can do that.

CHAIR—Thank you. By when will you be able to provide the committee with that?

Mr Lyons—It should only take a couple of weeks.

CHAIR—That would be good; thank you. Two weeks from today?

Mr Lyons—Yes.

CHAIR—Thank you. Thank you very much, department, for your preparedness to go beyond time; thank you very much, Hansard; thank you, my colleagues; and thank you, our wonderful secretariat, Alison Kelly and Veronica Gover.

Committee adjourned at 5.22 pm