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SENATE

SELECT COMMITTEE ON THE NATIONAL BROADBAND
NETWORK

Reference: Implications of the proposed National Broadband Network

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**SENATE SELECT COMMITTEE ON
THE NATIONAL BROADBAND NETWORK**

Monday, 24 November 2008

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

Senators in attendance: Senators Birmingham, Fisher, Macdonald and Nash

Participating members: Senators Abetz, Adams, Arbib, Barnett, Bernardi, Bilyk, Mark Bishop, Boswell, Boyce, Brandis, Carol Brown, Bushby, Cameron, Cash, Colbeck, Jacinta Collins, Coonan, Cormann, Crossin, Eggleston, Ellison, Farrell, Feeney, Ferguson, Fielding, Fierravanti-Wells, Fifield, Forshaw, Furner, Heffernan, Humphries, Hurley, Hutchins, Johnston, Joyce, Kroger, Ludlam, 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 proposal to partner with the private sector to upgrade parts of the existing network to fibre to provide minimum broadband speeds of 12 megabits per second to 98 per cent of Australians on an open access basis; and
 - b. the implications of the proposed National Broadband Network (NBN) for consumers 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. 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, the likely future improvements in broadband services (including the prospects of private investment in fibre, wireless or other access networks) and the need for this government intervention in the market;
 - b. the effects on the availability, price, choice, level of innovation and service characteristics of broadband products if the NBN proceeds;
 - c. the extent of demand for currently available broadband services, what factors influence consumer choice for broadband products and the effect on demand if the Government's fibre-to-the-node (FTTN) proposal proceeds;
 - d. what technical, economic, commercial, regulatory and social barriers may impede the attainment of the Government's stated goal for broadband availability and performance;
 - e. the appropriate public policy goals for communications in Australia and the nature of regulatory settings that are needed, if FTTN or fibre-to-the-premise (FTTP), to continue to develop competitive market conditions, improved services, lower prices and innovation given the likely natural monopoly characteristics and longevity of the proposed network architecture;
 - f. the possible implications for competition, consumer choice, prices, the need for public funding, private investment, national productivity, if the Government does not create appropriate regulatory settings for the NBN;
 - g. the role of government and its relationship with the private sector and existing private investment in the telecommunications sector;
 - h. the effect of the NBN proposal on existing property or contractual rights of competitors, suppliers and other industry participants and the exposure to claims for compensation;
 - i. the effect of the proposed NBN on the delivery of Universal Service Obligations services;
 - j. whether, and if so to what extent, the former Government's OPEL initiative would have assisted making higher speed and more affordable broadband services to areas under-served by the private sector; and
 - k. the cost estimates on which the Government has based its policy settings for a NBN, how those cost estimates were derived, and whether they are robust and comprehensive.
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

PRICE, Mr Arthur R (Art), Chairman and Chief Executive Officer, Axia NetMedia Corporation.....1

Committee met at 10.42 am**PRICE, Mr Arthur R (Art), Chairman and Chief Executive Officer, Axia NetMedia Corporation**

CHAIR (Senator Fisher)—I declare open the next stage in the public hearings of the Senate Select Committee on the National Broadband Network. I extend a particularly warm welcome to Mr Arthur Price, from Axia NetMedia Corporation. Thank you, Mr Price, for giving us your time and your expertise and in anticipation of what you are about to say to us.

I will run through a couple of quick formalities as chair. The evidence that you are about to give to the committee is public. If at any stage you wish to provide evidence in private, then you may request that that occur and the committee will take your request into consideration. It is unlawful and indeed potentially in contempt of the Senate for a third party to attempt to interfere or in any way influence evidence that is to be provided to this committee. It is also potentially in contempt of the Senate to provide evidence that is false and misleading in any way. If at any stage you want to object to answering any of the questions that I or any of my good colleagues ask of you, then feel free to indicate that you wish to object. We will ask you for the grounds upon which you are objecting and then consider your request in that light.

We have just got to hand a submission that you provided to the department. We had not been aware that that had been made until today, so committee members have not yet had the opportunity to familiarise themselves with that submission. At this stage, Mr Price, you might care to make a brief opening statement, after which I and my colleagues would love to explore the issues further with you by question and answer.

Mr Price—Thank you. It is a pleasure to be here, Madam Chair. We have a few slides that may be useful to walk through as we make these opening remarks. What would be the proper procedure?

CHAIR—If you have copies of them sufficient for the committee then thank you, that would assist. Thank you, Mr Price, we are getting them now. Please proceed.

Slides were then shown—

Mr Price—I will just make the opening observation that we are an active participant in the current bid process that is underway with the Commonwealth on the NBN proposals, and of course that process has its own privacy requirements. Our intention here is to provide the committee with the information we can without compromising those other privacy obligations that we have under that process. If that is fine, that is the way we plan to proceed.

The next generation network discussion is quite complicated because it deals with old and new technology, old and new businesses and old and new services. We find that it is useful to take a look at what is actually happening in the modern telecom space. These slides outline our view of how this industry would be best structured to focus on the end result of an end user experience.

This first slide, ‘Competing with your customer does not work’, is kind of an interesting slide in that only in the telecom industry does anybody advocate that competing with your customer

can work. There is no real high-performing enterprise value chain where a critical provider of a service sells it into a value chain and then turns around and competes with the buyer of that service and expects that process to create an optimal experience for the end user. The history to that has come out of the legacy telecom space.

The next slide refers to the new next generation network environment. From a technology point of view first, the transport services, which are those services on the left-hand side of this chart, are the services that create transport connectivity between two end points on a network. Focusing on those transport services: today those are digital services, IP protocol services, and they are ubiquitous if they are running on modern topology. The best modern topology is a fibre based network. If you can create a fibre based grid and put on that fibre based grid only IP layer compatible technology as opposed to proprietary protocols and use digital technology, then you have a network that can haul digital traffic of any kind for any purpose anywhere—that is, one network for hauling this digital traffic in any direction in real time. That is what we call these transport services. If you draw this dotted red line across the chart, you can break it between what we call the web service providers. In a modern network world the web service providers provide a whole bunch of experiences from an end user point of view. A couple listed here are Facebook, MySpace, Google, Skype, MSN, YouTube and Yahoo. If you put in things like voice over IP and IPTV, you have just put in two big legacy industries. The legacy telephone business is voice over IP equivalent, and the legacy cable TV business is IPTV equivalent.

In the new environment, things that used to be an integral part of the network can now be an application sitting independent of the network, a web service independent of the network. Skype, which is a worldwide telephone service, has more phone calls than any other integrated telecom company, period, at any point in time, and it does not charge anything for it. That is because it is a web service sitting at this new layer, and somebody else has paid for the transport services. So Skype unbundled the voice phone call from the transport services of the network, and the end user bought the transport services for another whole purpose. Then they said, 'I can use Skype because I've already paid for the transport services.' In the slide, the red dotted line applies to a million services.

The two old traditional legacy networks only had two services: the telephone network had a phone call, and the TV network had a TV show. Those are two big industries that only had two products. When the new technology called the internet and digital and IP came along, all of a sudden the new network grid could do anything. That is the technical side of the discussion.

Moving to the commercial side, on the right-hand side of the slide, the vast majority of the money to be made, the profits and the revenues are sitting up at the web services layer. That 75 per cent imagery is the actual commercial driver that is behind these networks; it is the big money sitting up at the services layer. Only about 25 per cent of this telecom pool is actually sitting down at the network layer. When you think of it that way, it is really understandable how the legacy telecom players spend a lot of time figuring out how they can keep as much as they can from the services layer, because that is where the money is. So the incumbents around the world are always in a wrestling match with the regulators and their customers to see how much of that 75 per cent pool they can actually keep.

Right now they have a lot of it because of the position they have in the network space, but, as soon as that network transport gets unbundled from the services layer, the question will be who

is going to get that services layer participation. Right around the world, every incumbent is in the middle of that debate because their telephone service is just a web service in the new world. Further, they used to have a telephone business and then they started offering data as an incremental service. It turns out that the service that is really incremental in a high-performing network is the voice service, not the data service. This digital interconnect, transport services unbundling from the web services, is the pivotal way that end users get the choice of their services because they pick from the web service sector.

As a quick by-line, I have two daughters and a son who are all between 20 and 30. They have lived in a number of places around the world and they have never given me a fixed wire line telephone number. They do not even have one, they have never ordered one, they do not buy them. That is a whole industry for which the next generation says, 'Why would I buy their original product?' I do have all their Skype addresses, all their email addresses, their Facebook stuff, their Messenger and their pin number on their other phones, but they do not even have a fixed wire line phone number. They are not unusual; that is the evolution of this marketplace.

The next slide raises this same question from a little different perspective. There are really three components to one of these next generation networks: firstly, a global gateway, which is a gateway to the world in terms of connectivity; secondly, a community interconnect fibre network, which is a grid that connects the community to the global gateway. Just think of any community being on a fibre grid that gets them to the global gateway. Thirdly, there is the piece within the community, and that piece within the community we call local access. There are other terminologies for it, such as last mile—but last mile is a telecom legacy term. Local access is really from the point in the community that is connected to the global gateway to the premise. When thought about in that way, there are a number of technologies that do that job in the digital IP world, as opposed to only one technology that did that job in the telephone world. Those technologies are 3G and 4G mobility technologies that are starting to merge to some degree with the WiMAX technologies which used to be thought of as pure fixed point wireless technologies; there is Wi-Fi, an earlier version of WiMAX; there is the legacy copper to the premise; and there is the alternative of fibre-to-the-premise. We picture this as the house, but actually all these same technologies apply to the people when they are moving around. Wireless is becoming more dominant as an integral part of a next generation network than it ever was because the wireless technologies are all growing in their performance and they have the attribute of more mobility. They can be used in the house or out of the house.

That little story I was talking about regarding my daughters and my son, they value the mobility and they get the internet and they can make a phone call, so why have that fixed wire line? It has to have way higher performance than a telephone call for them to buy it. If it turns around and somebody offers them big bandwidth on a wire line then they are quick buyers, but not for the voice call.

This segmentation opens the public policy question of whether we are going to have one local access technology or whether we are going to create competition at the local access level. That is a pivotal fork in the road from a public policy point of view, because if you want competition you have to create a competitive playing field. If you are willing to have one answer then you need a regulatory superstructure that recognises there is only one chosen outcome. So it is either regulation or it is competition. The pit here is: you think you have competition if you do not, because if you think you have competition then you do not have regulation, and if you do not

have competition you just do not have either. You do not have competition and you still do not have regulation.

We find the public policy arena picks one path or the other. Typically they would prefer to have competition. In order to create competition in this local access piece, the person who has the community interconnectivity, if they are competing in the local access piece, means you will not have competition. This is the second 'do not compete with your customer' point. We had it before on the web services versus transport services. Now in another whole dimension within the transport services sector itself, if you want to create competition at the local access level, the party with the backhaul cannot be competing with those parties. That is the other pivotal element of this. If you do these kind of community interconnect networks, then the community internet fibre grid can level the playing field on distance and distance dislocation. That whole postage stamp issue can be solved with community interconnect because what drives the different prices and services is the distance between the communities and the cost between the communities, not the cost within the community.

These local access costs are not materially different per customer in a big market or a small market. The local access piece is not materially different. What is materially different is whether we are in Broome or in Brisbane, because the network that gets to that place has to be amortised over that market; that is what creates the digital divide. Alternatively, if the only person that has connectivity out of that community is the person you are competing with, then you are out of business. This structural separation debate often applies at the web services versus transport level, but it also should be thought of on this other whole paradigm of community interconnect grid versus local access. If you want one outcome, regulate it and have a regulated utility. If you want competition, then you have to create this 'competing with your customer does not work' issue. That is taking a bigger picture.

I thought it would be useful to take you through quickly the three jurisdictions where we have deployed these same principals. First is the Alberta SuperNet, which in many ways has direct parallels to most Australian states. There are two 1 million person cities in Alberta—Calgary and Edmonton—and then there is everywhere else. The geographic area of Alberta is 600,000 square kilometres, there are 429 communities, 4,400 government end points, and it took a 15,000 kilometre network to connect all these communities. The community interconnect grid connects every community in Alberta to the global gateways in Calgary and Edmonton. We used the 'do not compete with your customer in the local access world' to solve the local access competitive marketplace challenge in the small markets. Now there are 75 special local access service providers providing those services in all those markets. Before the SuperNet was built, there was no effective local access alternative in any of the small markets. Of course, this network also goes to the province-wide health environment, so they now have an enterprise-wide health network that is all real time, next generation network connectivity. They have the same on the learning side and the same on the security side, so the government itself has its enterprise-wide next generation network for all the e-services that can save the government funds.

That is Alberta. This was done at the equivalent of state level in Australia. Alberta does not have any regulatory status, so this had to all be done without a regulatory umbrella that reinforced it. The way it was done is the province committed its business to the network. They committed for 10 years all of the telecom business that they were using the legacy network for and getting very poor service outside the main centres to this new network. That underpinned

this new network without them committing more money than they were already spending. It is actually less than they were already spending. That was the underpinning here, because there is no regulatory umbrella that the province of Alberta could actually deploy. That is a national regulation in Canada, just like it is here. That was the first example. It was a very rural connectivity challenge, much like outside the main cities in Australia. Alberta is targeted at the rest of Alberta; it was not targeted at Calgary and Edmonton.

The second example is France. Under a national framework, they created a DSP structure, a Delegations de Service Public, that is a PPP structure in terminology in Australia. At the departmental level, which is the regional government, they go out to bid for fibre grids. If they do it under this national legislation that creates this standard PPP structure, then they can qualify for up to 70 per cent of the capital cost from the federal funding world.

You bid a 25-year franchise; you win a 25-year fibre grid licence. Axia bids wholesale rates and an open access, no conflict structure. We bid the amount of grants that it takes to make it viable for us, given that the incumbent, France Telecom, has already got whatever they have got in the market. We have won 12 of these regional networks that cover 547,000 kilometres. It is kind of interesting, because France and Alberta are about the same size. Those networks cover 5.2 million people, more than 2,372 communities and approximately 30,000 businesses. We interconnect these regional networks with a fibre backhaul grid that gets us to the global gateway in Paris. Every one of these networks are effectively a community interconnect grid back to Paris. The difference between France and Alberta is we go fibre to the premise for some of the markets, we go fibre to the kerb, we go fibre to a wireless point and then WiMAX Wi-Fi as the secondary technology, and we go fibre to the France telecom exchanges. This process is the sophisticated approach to the regional markets, as opposed to the metropolitan markets. I like to use the analogy that this looks more like the Gold Coast. We are looking at France as quite similar to the outside main city but still, in Australian terms, very urban as compared to very rural.

In the third example, we led the consortium that won the fibre-to-the-premise award for Singapore. In this case, the challenge was fibre to every premise, so instead of 600,000 square kilometres, we knock three zeros off and we have 693 square kilometres. The population is 4.8 million people, there are 1.12 million residential premises and 152,000 other premises. This fibre grid goes into the premise through the wall to a port in the premise. It is not a fibre-to-the-telecom room; it is a fibre-to-the-premise bid. Therefore everybody in Singapore will simply be able to buy a standard network device and plug it into the network. That is how easy it will be for them to adopt this technology. It is secure, reliable, future proof and affordable. That last one is kind of a precedent setter in the minds of a lot of people.

In this case there is ownership separation between the passive infrastructure and any telecom licensee. We own 30 per cent of this because the limit of ownership in this fibre grid is 30 per cent by anybody that has any other telecom business in Singapore. Therefore, there are four partners in the consortium: Axia at 30 per cent, which is the maximum; SingTel, the incumbent, with 30 per cent; Singapore Press Holdings at 25 per cent; and SingPower at 15 per cent.

That consortium's bid was SG\$15 per month for fibre access to any residential premise in Singapore. Most people say that is not even possible. That bid is based on a full greenfield build of that fibre grid. So there you are with a \$4.5 million to \$4.8 million metropolitan city that is

modern which has, by the way, full cable at the latest hybrid technology, full DSL, VDSL, ADSL2 technologies already deployed. But the government of Singapore said, 'That's not good enough, we're moving into a knowledge based economy instead of a blue-collar economy. Our neighbours all beat us on labour costs. We have only one choice to compete and that is to become a white-collar knowledge based service economy. What is the critical infrastructure? Critical infrastructure is no compromise digital connectivity. How do you get that? Fibre.' All of those answers are true, but SG\$15 per month for a fibre grid means you will be able to deploy a whole new next generation fibre grid within the current spend of the existing residents of Singapore. They are just going to get a big uplift in services and not have to pay more money. The objective for any process like this has to be getting a no compromise, high-performing connectivity within the price envelope that the old technology used to deliver, with much poorer services. If you can accomplish that, you have got the holy grail of the outcome because the end users get a higher performing service within the current budget they are already spending.

This network is an all new fibre build but it uses existing passive infrastructure. The two parties that came to our consortium, SingTel and SingPower, brought their duct infrastructure to the consortium. We pay fees based on the usage of that duct infrastructure, which would replace that duct infrastructure if the market all moved to the new network.

The challenge in Singapore was very high performing old networks. I call them old; the people that have them do not think they are old but in my world they are old because they are not next generation IP end-to-end fibre networks. Those networks continue to run. The challenge in all of this is how much market will move to the new network? Either the government has to legislate that it moves or the marketplace has to move. Singapore chose to let the marketplace decide. This consortium won by creating a commercial structure where the duct infrastructure gets paid based on how much traffic is on the new network. Those same ducts are the ducts used for the old network. Either they are being used for the old network or they are being used for the new network. In this case, the owners of those ducts do not get a penalty by the traffic moving to the new network because the duct use agreement reflects that. It also enabled the consortium to bid a structure that is much more financeable than if it had to purchase the ducts upfront. A challenge for every one of these next generation networks is how to deal with the existing assets.

The last slide is about various local access technologies, and I welcome any questions. The whole local access issue can become very confusing from a technical point of view. Sometimes it is intended to be confusing depending on the purpose of the discussion. We are a company that creates competition amongst local access providers—if that is the policy bias of the government—and Singapore wanted fibre-to-the-premise, so that was the right answer for them. Much of rural Australia would be interested in competition at the local access level. This slide relates more to that kind of market. you can see there across the bottom is the distance in kilometres that the connection is from the fibre backhaul. Think of it as a fibre backhaul point which has got no limits from a performance point of view. Now we are going to use a technology to get to the premise. What does that technology look like?

There is—that is, one radio talking to many radios simultaneously. That technology has a three megabit capability deteriorating to two or one megabits at two kilometres. Basically that point-to-multipoint wireless technology range is three kilometres. The red line is ADSL which, by the way, is quite a bit better than dial-up on the copper. With ADSL, you can get in the range of

seven megabits very close to the fibre backhaul space and it deteriorates to nothing at a distance of about six kilometres.

Next is ADSL2, which is very close to the fibre backhaul, has a capability of as much as, say, 16 megabits, deteriorating very quickly when you go past one kilometre. Those are the state-of-the-art copper technologies. The big black arrows are non-QoS enabled technologies.

What we mean by quality of service is a smart network which can differentiate between video traffic, audio traffic and data traffic that does not care about how fast it travels. Non-QoS technologies means there is no differentiation, so the network is not efficient in higher performing services because the other packets get interspersed with the video packets and the video does not work. Those technologies are simply not QoS enabled. In reality, a three-megabit QoS enabled committed capacity is a way higher performing service than either of those DSL technologies. It is very easy to get into this 15-megabit thinking and think you have a high-performing network when in fact its best efforts are maybe up to 15 megabits, whereas if it is QoS it can be fully bidirectional and smart, which is what the other technologies we have listed do. Point-to-point wireless is a different style of wireless. It is 45 megabits plus, fully QoS enabled and fully duplex, as opposed to being asynchronous like those other technologies. Otherwise, you get fibre to the premise and it is all over. It is not even on the chart—it is somewhere 10 times off the chart, with no limitations from a QoS or a duplex point of view. That is the debate at the local access level.

Senator IAN MACDONALD—Do they have the top one in Singapore?

Mr Price—Yes. They will have whatever they want fibrewise, because that fibre goes right to the premises.

CHAIR—Thank you for your opening statement. You have in fact answered many of the questions that we would otherwise have asked, but I think we have lots more.

Senator NASH—Thank you very much for your submission. It has been extremely useful. I notice in the section of your submission on the regulatory framework that you see a necessity to impose strict structural separation between the NBN owner-operator and the fully integrated information and telecommunication services sectors. I gather from what you have already said that you believe that the successful bidder should be structurally separated. Can you expand a bit on that for us? Also, the committee has had some evidence prior to today that would suggest that structural separation is not necessary because just changing the regulatory framework and making it stronger would do a good enough job. The second question is: do you believe that? If you do, how would that regulatory framework work?

Mr Price—Regarding the first question we say that, to get a high-performing end result and choice for the end user, the party that has the next generation network should not be competing with its own customers. We can translate that into structural separation, but structural separation is sometimes used to say even more than that. That is quite different than saying the incumbent must structurally separate. That would be the incumbent's view of that interpretation if they were the only ones that were eligible to do the next generation network. If you think of the three places we have done this, the government did not require the incumbent in any of those places to structurally separate, but they got a structurally separated outcome.

Senator NASH—How did they get that?

Mr Price—From a third party. They got it from a party other than the incumbent.

Senator IAN MACDONALD—So the incumbent still has its own network.

Mr Price—And it is still fully vertically integrated in all three of those markets.

Senator IAN MACDONALD—This is just a separate network that competes with, in the French case, the original French telecom network.

Mr Price—Yes. In each of those cases that is the case.

Senator NASH—Do you then end up with an overbuild? Do you think we could actually cope with that, if that is what you are saying? I am trying to understand completely what you are saying. If you had the existing network and then built alongside that a new network—a lot of what we are talking about with one of the particular NBN bidders is an upgrade of their own network—is that duplicating too much? Am I on the right track here?

Mr Price—Let me keep it generic so I am not crossing probity issues. I will talk about the community interconnect piece of the new network first. It needs to be a fibre end-to-end next generation network. It cannot be a combination of old legacy electronics, old legacy switching and old legacy business concepts; otherwise, or it will not accomplish anything and will just be a marginal change in the existing process. That community interconnect grid can be comprised of all new fibre and electronics or a combination of old fibre that meets the specs and new electronics. Taking these other three examples, in all cases we have been able, after the bid is over, to purchase access to fibre from the existing owners of the fibre. We can never do that before the bid, but we always can after the bid. Part of the reason for that is that in these other jurisdictions we do not compete with them—we are not competing at that web services layer. If we were that would be another whole challenge, but we do not. We are an open access, level playing field company that the incumbent can use on the same basis as anybody else. The choice of overbuilding is really up to the person that owns the existing assets. If they want to make them available and redeploy their capital somewhere else, they can sell their existing fibre assets or any portion of them, redeploy their capital and put them in the services business. Typically, we do not have to overbuild, even though we can. And a party like us doing it is a little different to their archrival, who is competing at the services layer, doing it.

CHAIR—Why is it a little different?

Mr Price—Because we do not compete in the 75 per cent of the market that they are worried about.

Senator NASH—And you would not, hypothetically speaking.

Mr Price—Yes. That is what structural separation does. Structural separation is being used here as the transport layer. Whoever is doing it is not in the services layer.

Senator IAN MACDONALD—In France, Alberta and Singapore, have you ended up using the alternative's fibre network?

Mr Price—In Alberta, yes. In France, sometimes, because there are 12 different regions in France. In Singapore, yes, in the context of the critical infrastructure being the ducts.

Senator IAN MACDONALD—But in Singapore the original one is part of your consortium as well, which would make it a bit easier.

Mr Price—Yes, it could. As long as the NBN or next generation network is controlled by parties who are not in the services layer or not in the local access business where the public policy is trying to create competition—

Senator IAN MACDONALD—In Australia it would be, hypothetically, that you own the network and have 50 per cent ownership and that Telstra and Optus are 25 per cent players each. Is that the sort of thing you are talking about?

Mr Price—That might be cutting it a little bit too tight to the wind—fifty-fifty between the integrateds and the nonintegrateds.

Senator IAN MACDONALD—Well, 60:20:20.

Mr Price—The practical thing is that the owner of that network needs to survive based on the success of their customers, as opposed to surviving based on their customers failing, and the success of the incumbent is actually better if they keep those retail services themselves.

Senator IAN MACDONALD—As the network owner only and not the retail provider, how do you assess your charges and what profit margin are you seeking? I do not want you to be specific, but looking at the examples of France, with 12 departments, and Singapore and Alberta, how do you assess your profit?

Mr Price—We start from only using the latest technology. We start with a cost performance envelope that relates to the existing new technology as opposed to the old technology, and we add up costs. Our business is a very cost-orientated high tech deployment business, as opposed to us having history. So we go a market, we have no history. We have no history to protect, we have no profits to protect, we have no historical costs to protect.

Senator IAN MACDONALD—But in a case where you are competing with an original network, there has to be some reason for people to use you rather than them. I assume it is just price and quality.

Mr Price—It starts with big performance, no compromise performance. To the extent the market needs better bandwidth and real bandwidth—not best efforts up to bandwidth—we cannot compete with dial-up and the old low bandwidth technologies. We are not even in that business. We are in the business of high performing, real time, ubiquitous performance. To the extent the market needs that, the old networks cannot do it. The competition on these new networks is not the old networks at the big bandwidth level; it is the old networks at the low bandwidth level. We can only do this where the market values high performance. That is one.

Secondly, you need a policy environment that lets it work. In Alberta, the government committed its business to the network. It did not cost them anything to commit their business, because they were spending that money already on the old network, but it was reinforcing the old network when it was on it. The old network had the money and the new network does not have the money. In Alberta the government moved its business over to the new network and got way higher performance for doing that, and that gave the new network an underpinning that nobody could take away. That is what happened in Alberta. In France, they cannot commit their business but they committed a long-term franchise and some grants. And we build the fibre. In France they do not have the cable company competing with the telco.

A lot of these regional telecom networks are really very low performing networks and the gap in performance is very high, like much of rural Australia is. A lot of France looks like that. In France we bid a 25-year franchise rate and we bid a certain amount of grants. Those grants, in our view, in those markets, are what it takes for us to become the network of choice from a cost performance point of view in that region, and then the customers come to our network instead of any other network.

We are also relying on us not competing at the services layer, meaning that the incumbent, if he needs big bandwidth—France Telecom in this case—he would use our network rather than try and overbuild on our network. So our business model there relies on this 25-year franchise plus some grants to offset the advantage the incumbent has from the outset.

Senator IAN MACDONALD—Thanks for that.

Senator NASH—Can you just explain a bit for us about the relationship? I suppose Alberta is the good example of how you have worked with the governments to get that sustainable framework to be able to do what you do.

Mr Price—In Alberta the government's objective, public policy wise, was to eliminate the digital divide between the two metro places, Calgary and Edmonton, and the rest of Alberta. That was their policy objective. What they found was the economic activity that depended on these digital networks had to move to Calgary and Edmonton, as opposed to choosing to stay in the other communities that were smaller and more dislocated. So that was the public policy objective there: create a next generation network that connected every community so that, to the extent business, residents or government needed high performing digital services, they did not have to move to Calgary or Edmonton in order to work. They did some consulting with the industry—the broader industry, not just telecom.

To give a little bit of background, Alberta is a big rural, economic area. A lot of the GDP is rural: oil and gas, agriculture, mining and lumber, like a lot of Australia. They were paying attention to that economy because it is critical. They were advised to put together their purchase and go out to bid and see what they could get. The Alberta government took that advice and went out to bid. There were many consortiums or companies that bid. This was six or seven years ago. There was one next generation network guy bidding—that was Axia—and everybody else was a typical integrated carrier. We bid the concept where we put this point of presence in every community, create wholesale prices in those communities that mirror the wholesale prices in Calgary and Edmonton. Now there is no cost dislocation from any community in Alberta from

a transport point of view to what could be achieved inside Calgary and Edmonton. We did that because we got the government to commit its business to the network.

Senator NASH—So that gave you enough security, I guess, and economy of scale to be able to roll it into those communities where you have got the point of presence. At that point did you find that the competition occurred naturally to provide the services once you had got that requirement into the community?

Mr Price—Yes, now we have those 75 speciality people doing that business, and those people vary everywhere from the big guys, the incumbents—who need big bandwidth services for some purpose and their old network would not do it—to the mums and pops in small markets where they say, ‘Well I’ll do it for the rest of the people in this market.’ In the three years it has been running, we are up to 75 of those kinds of people, those kinds of local access providers, and they have covered over half of the small markets and are continuing to attach new markets. If you were to turn the slate around, if we competed with those people, we would take the best customers, we would turn around and marginalise them with our backhaul rates and then, when they go broke, we would buy them up and we would own the market. That is exactly what has happened everywhere in the world. If you don’t have this ‘I don’t compete with my customer’ principal, you cannot create competition in a small market. In fact, you would have trouble even creating it in a big market, if you are competing with your competition.

Senator NASH—Thank you.

CHAIR—How would you translate that experience to Australia, in particular in terms of providing services to rural and regional Australia and areas that may be under-serviced at the moment? We have heard evidence, and I am sure you are aware, that the national broadband network should be rolled out rather than rolled in. I am sure you are across that. How would you translate your experience to Australia to ensure delivery to those areas that are currently missing out and might otherwise be the most difficult to access in terms of provision of service?

Mr Price—I am going to have to walk around that just a little. If you were to ask that question a week from now it would be a little different. The key thing is: stick with these principles. I will go back to Alberta and you can draw the analogy. The Alberta government wanted not to go on an ongoing subsidy path. They wanted a solution that they understood and that did not require ongoing subsidies. The existing telecom sector has ongoing subsidies for those markets already, built right in to the whole structure. That structure is really quite inefficient because it is attached to the old phone call, and that whole regulatory framework is not appropriate anymore. The problem is, how do you get to the new regulatory framework when that party opposes any change? In Alberta, we just offered the other solution and did not require any regulatory change. That is one thing.

The other solution created a point of presence in every market which looked like it was in the city. From an actual performance and cost point of view, we imported all the rural communities in Alberta to the global gateway. There is no better pricing available if you were inside Calgary than if you were 700 miles from Calgary; it is the same pricing. Now, from a cost and performance point of view, they are imported to the global gateway. That gets you to a point where you are down to local access. There you either have fixed wire line monopoly type structures—because you cannot replicate fixed wire line. There are never going to be two fibres

to every home by two competing fixed wire line people, just like there are not two water systems to every home or two power grids to every home. It is in the same category.

To everybody who says, 'I'm going to create competing infrastructure at the fixed wireline, fibre or copper,' I would say it has just never happened anywhere and been functional. The one place it has happened is in the cable industry versus the telecom industry. The only reason it happened is that TV in the United States became a big hit before there were satellites, so the only way to do terrestrial cable based TV was to build a new network. In the United States—and I have seen some of the commentary down here, some people call that fixed wireline competition—you would never replicate it. It is way too expensive to replicate two fixed wirelines, one for TV and one for telephone. That is just an historical fact. Now you would create one fixed wireline, it would be fibre, and it would do everything. You would never double the expense and do two. That is if it is fixed wireline. There is no competitive fixed wireline technology; there is just one fixed wireline solution.

CHAIR—If I understand it correctly, you said essentially that your experience has been to import the regional communities to a place at which you are. I guess importing is your version of what witnesses before us have contemplated when they have talked about rolling in rather than rolling out, except it is practically different—it is the same sort of concept yet implemented, in your experience, somewhat differently from what witnesses before us might have been contemplating. Is that right?

Mr Price—Yes. I would say the difference is like this: did I take my customer to a global auction market or did I take a network to my customer? If I take a network to my customer, I start thinking of charging that customer for that network, so I get into this mentality of the incremental costs for the incremental customer. The farther away you are, the less I am interested in doing that. You could flip it around and say, 'My job is to take everybody in a region to a global gateway and at that global gateway they are at the auction market for services.' This separation between services and transport is pivotal because I put them on a transport grid that makes them look like they are in Calgary, Perth or Brisbane and at that location there are all these competing web service people offering voice, TV and Google services—the suite of services. Our job is to get them connected, no differently than if they were sitting in a house in Brisbane. The performance of the network would be the same, not compromised, and the cost would be the same. Now they are at the auction market just like the people in Brisbane, Perth or Sydney are at the auction market.

CHAIR—The cost to the customer would be the same.

Mr Price—And the performance is pivotal. And they are free to choose from the auction market as opposed to that transport getting bundled with the incumbent's bundle, because that is their existing choice. Right now their existing choice is, 'If I want that transport from Telstra, I've got to buy the Telstra bundle,' because they are going to sell these web services. That is part of the deal; there is no, 'I'll sell the transport all by itself'; the transport is not available by itself. If you want to buy it by itself, it is really expensive. So unbundle the two, and then say, from a public policy point of view, can we import all those people to the global auction markets now that they are at the same place and have the same buying power? They are not disadvantaged.

Senator IAN MACDONALD—I have two quick questions or themes. The Alberta situation, from your diagram, seems to be that you are using fibre to the base network, fibre to the extended network and wireless for the more remote parts; is that correct?

Mr Price—The only wireless links in Alberta are carrier grade wireless. It is none of the ones that we were talking about here. It is microwave wireless and it is typically where you actually could not implement fibre for some geographical reason.

Senator IAN MACDONALD—I am trying to relate it to Australian situation. You were saying earlier that you were aware of the OPEL bid or you were around at the time. The OPEL bid, as I understand it, was fibre to a certain part of Australia and wireless where you could not take fibre. Is that your understanding, and is that similar to what you have in Alberta?

Mr Price—Actually what we have in Alberta is a much more extensive fibre grid, using wireless primarily for local access. In north-east Alberta it is permafrost and it is hard to put fibre in permafrost. You do not have that problem here; you do not have the permafrost problem. You have some heat problems but—

Senator IAN MACDONALD—I assume ‘permafrost’ means ‘permanent frost’ or ‘permanent ice’?

Mr Price—Yes, permanent frost.

Senator IAN MACDONALD—We do not have that, particularly up where I come from.

Mr Price—You can extend fibre way more than people think; it is not as costly a technology as people think. You take it as far as you can and then you do wireless off the end of it. But typically wireless only works as a local access technology where the density of use is not so high that the wireless itself is the limitation.

Senator IAN MACDONALD—What, in your view, is the maximum wireless range you can have?

Mr Price—From microwave wireless you can go a long ways, but it is expensive; that is carrier grade point-to-point wireless. Those are the links you are seeing on the slide. The wireless technologies I was showing on the last page have 40 kilometre ranges. You can think of that point-to-point wireless technology of 45 megabits having a 40 kilometre range at the outside. It is a much more functional technology than putting in copper and it is a much more functional technology for that distance than copper.

Senator IAN MACDONALD—But there has been a suggestion to our committee that any wireless is nowhere near as good as fibre. You are agreeing that it is not as good as fibre but you are saying it is almost as good as fibre?

Mr Price—It is actually better than fibre for five megabits to go three kilometres. So the question is: what the objective? Of course, fibre is the best because it has no complications; it just has a high fixed cost. It is that fixed cost element that is the challenge with fibre.

Senator IAN MACDONALD—Again, I am trying to relate this to Australia, and I am being parochial here, but up in the north of Queensland and the north of Australia, where I come from, there are huge distances which one would think would not justify fibre. I hope that is how it turns out, but I would be surprised. It seems to me that whatever network we get in Australia, to be cost-effective—unless it is hugely, heavily subsidised by the government—will have to, in the more remote areas, be by wireless. Then I guess it is a question of the quality of the wireless.

Mr Price—I would say it is probably not near as big a challenge as you think.

Senator IAN MACDONALD—To?

Mr Price—To take fibre to 90 per cent of those rural remote places.

Senator IAN MACDONALD—Even if they are the only one in 50 square miles?

Mr Price—The challenge is the efficiency of the new technology verse the historical cost, and the historical cost is already a big number.

Senator IAN MACDONALD—Okay; thank you for that. On your understanding of the OPEL bid—and I am assuming you do have an understanding—where did it fall down in a technical sense? I am not talking about the money, the regulation et cetera. Did it fall down—perhaps it did not?

Mr Price—I think it was flawed in a public interest sense because it was not going to create the open access neutral fibre grid. It was dominantly wireless and dominantly for another purpose, and dominantly for the purpose of one party. It depends what the public interest was.

Senator IAN MACDONALD—That is fair enough. How does Alberta compare with the other states of Canada? Is your system better than your neighbours? Why are you there and not elsewhere in Canada?

Mr Price—It takes a government framework to do it. Frankly, what happened in Alberta is that most of the incumbents went to their state governments and made all kinds of promises. When the Alberta government awarded this arrangement, most of the incumbents went and made promises so that it did not happen there, which is not unusual; incumbents tend to do that.

Senator IAN MACDONALD—We have got a lot of evidence about that. You could not call yourself a dispassionate observer, but I am sure you are an honest observer. How does the Alberta system compare quality wise and price wise to the other systems in similar states of Canada?

Mr Price—Once you are outside the metropolitan centres, the bandwidth available in Alberta simply is not available anywhere else.

Senator IAN MACDONALD—Is that right?

Mr Price—It is just not available. The reality is, until you get a fibre grid out there, it cannot be. You either have people have access to this digital economy or not. In rural Alberta they can;

they can choose. For all intents and purposes in the rest of Canada, if you are in the rural economy, you do not have a choice. You could not buy a 20-megabit service; it could not be delivered, because the whole infrastructure does not have any capacity to actually deliver that technology.

The key thing is: when you are spending public money, get the arrangement that does not compromise the ultimate performance. Then the marketplace can adopt it over time as opposed to it being stuck in no man's land with a marginal improvement and thinking an asynchronous, non-QoS 10 megabits is better than where I am today.

Senator IAN MACDONALD—Finally, if I am a user in a town of 20,000 people more than 200 kilometres from the capital in Alberta, will my cost be more, less or the same as it would be if I were in any other of the states of Canada?

Mr Price—No. It might be the same for a very low bandwidth. It is not even comparable for high bandwidth. These new networks all drive big capacity. Say you are a specialty agribusiness in rural Alberta—I know one called Sunterra because I am a principal owner of it—and you have customers in Japan and specialty plants in rural Alberta. If you want to do any kind of telecommunications beyond the old phone call—and these are places that are 30 miles outside a city, not 500 miles—that was not even possible and now it is real time.

Senator IAN MACDONALD—In Alberta but not elsewhere in Canada?

Mr Price—Absolutely not.

Senator IAN MACDONALD—Okay, thank you for that.

CHAIR—Senator Birmingham.

Senator BIRMINGHAM—Thank you. Mr Price, thank you very much for your time and very enlightened evidence today. I just want to quickly get to the bottom of one or two little things. In building the Alberta network, on your map here you have shown the base network of fibre that existed. Who owned that to start with?

Mr Price—If you were not close to it, that slide could be a little bit misleading. The base network terminology is not all existing fibre. That is the part of the Alberta market that Bell Canada was willing to build its own network to. The incumbent in Alberta was Telus. Bell is the incumbent in Ontario and Quebec. We have multiple incumbents spread across the country, not in each market. Bell was coming to Alberta as the new guy, so he picked the part of Alberta for which he built his own network. That is called the base network in the slide. It did not necessarily have existing fibre. Some but not all was existing fibre. The same occurred with the extended network. The remaining part of the province we did—the part that Bell would not do with its own money because of the density of the market. Think of that as economic/uneconomic from their point of view. The rest, which is the 350 out of the 420 or 380 out of 400, we did with what is called here the extended network.

Each of us bought fibre from existing parties. Whatever fibre already existed, each of us acquired that fibre. Thirty per cent of that extended network was fibre that was already in the

ground, and we acquired that fibre after we won the award. That fibre that was in the ground was not necessarily even lit, because the party that had it there did not believe the economics worked for them. In Alberta we acquired that fibre, so 30 per cent of the dark blue that you can see on the slide was the existing fibre and elsewhere there just was not fibre. We never actually had to overbuild fibre.

Senator BIRMINGHAM—So you were able to access the existing base from whichever sources they came?

Mr Price—Just for that little clarification, before the bid the parties said, ‘Never, ever, ever will you have that fibre,’ because that was the bid basis.

Senator BIRMINGHAM—From the network build that you have undertaken to the home or to the premise, what is the connectivity that exists there?

Mr Price—In Alberta it is fibre-to-the-premise for government to create this enterprise wide network to which they commit their business. For everybody else it is some combination of these other technologies I have on that other sheet. It could still be upgraded copper, WiMAX, Wi-Fi, not much 3G yet but it is starting to come. This network creates backhaul opportunities for the mobility crowd that otherwise those small markets would not be viable. It enables all the wireless alternatives.

Senator BIRMINGHAM—In terms of non-government connections, do you have an understanding of, or can you give us an indication of what proportion might be through the copper network versus through other means?

Mr Price—Once you are outside the metropolitan space, there is only one copper network—the incumbent’s network. Typically they do not turn off that network; they add the bigger bandwidth network. Typically a rural Albertan would probably still have his copper network phone service. If they want bigger bandwidth capacity, they buy a wireless service from the SuperNet, from somebody using the SuperNet for backhaul. So they buy an additional service because the upgrade of that copper is not an acceptable option. They still have their copper network. The incumbent does not have a whole bunch of stuff turned off.

Senator BIRMINGHAM—What I am trying to get an understanding about is, at either end of the network build, what connectivity requirements there have been with the incumbent networks in some way and how those connectivity arrangements have been satisfied. From the Australian example, we get these concerns put before us that in building the fibre-to-the-node network there are needs to hook into Telstra’s infrastructure at potentially both ends, and you are just building a piece in the middle.

Mr Price—You will notice that fibre-to-the-node is not on this list. The reason fibre-to-node is not on this list is it is simply not a functional alternative. From a competitive landscape point of view, it is not a functional alternative. The only person fibre to node works for is the guy that owns the local loop and the guy that owns the backhaul. If that is the same party, there is no other functional purpose of the node.

We do not put it on the competitive landscape because we just call it copper. If you have a fibre-to-the-node strategy, the party that always has it is only the incumbent. The reason they have it is because they have got a lot of money hanging on those copper local loops. They are preoccupied with defending the copper local loop. Since it has such poor performance, the way to defend it is to get fibre closer to the premise so the copper local loop is not as poor performing. But, it only works for the incumbent. There is no practical way that any third party could compete with the incumbent at the node. It is just not happening anywhere in the world.

Senator BIRMINGHAM—Thank you. Lastly from me, in the build of the Alberta SuperNet, were you supported directly with government assistance above and beyond that commitment of government to connect?

Mr Price—It went in two phases. In the original bid, you bid the amount of reoccurring spend that you needed the government to commit to the network, and you bid the services that you would deliver for that, but you also gave the government an option to pay down that committed spend if they contributed capital. Think of them saying, ‘Commit \$80 million a year of committed spend, but if you contribute capital we’ll reduce that by our cost to capital.’ Under that clause Alberta contributed \$193 million and bought their committed spend down from what was already a good deal to a lower level.

If you look at Alberta, you see \$193 million of contributed capital. What you do not see on the other side of the ledger is that the committed spend went from \$80 million to \$50 million. They had surplus capital and they would rather deploy it like that than other choices. So that is how Alberta was done.

CHAIR—Mr Price, thank you very much. You have given us a different perspective, a refreshing perspective, and thank you for your time and your appearance before the committee today. Thank you very much.

Mr Price—Thank you. It was my pleasure. Thank you for your time.

Senator IAN MACDONALD—Thank you very much. Good luck with whatever the future might hold.

Committee adjourned at 11.53 am