COMMONWEALTH OF AUSTRALIA

Official Committee Hansard

SENATE

SELECT COMMITTEE ON THE NATIONAL BROADBAND NETWORK

Reference: Implications of the proposed National Broadband Network

FRIDAY, 21 NOVEMBER 2008

BRISBANE

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

Senators in attendance: Senators Fisher, Ian Macdonald, Minchin, Nash and Sterle

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-serviced 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

Committee met at 9.11 am

CHELLEW, Ms Linda, Manager, Indigenous Remote Communications Association

CHAIR (Senator Fisher)—I declare open this further public hearing of the Senate Select Committee on National Broadband Network. Firstly, we welcome Ms Chellew from the Indigenous Remote Communications Association. The evidence that you give to the committee is public. If you wish at any stage to give evidence in camera you may make a request of the committee to consider doing so. The evidence that you give today is protected by parliamentary privilege and it can be a contempt of the Senate for parties to attempt to influence or otherwise improperly pressure witnesses in respect of evidence given before the committee. It can also be a contempt of the Senate to provide evidence to the committee that is false and misleading. If at any stage you wish to object to answering any of the questions that I or any of my colleagues might put to you, you are able to do so, but we will ask you to state the grounds upon which you are objecting to answering the question and then we will consider your request. Thank you for your submission. If you wish to change or vary your submission in any way please say so. Would you like to make a brief opening statement?

Ms Chellew—I would like to give a precis of the submission and then add a little to that from my own experience, because the person who prepared the submission is not the one delivering it, but I am speaking on their behalf. I will start with a brief statement of the overall thrust of what we would like to present to the Senate.

In addressing the issue of the national broadband network IRCA will be very pleased to make the statement that the rollout of broadband is a vital provision to remote Australia, which has been described in the media as being the failed state of Australia. The lack of a provision of broadband could lead to a greater digital divide for those already very disadvantaged in the community. There are issues of equity and access attached to the lack of provision to this two per cent of the nation.

I did not contribute to this submission, but I would like to give a bit of my background and that of the other people who have provided advice on this submission. I have worked for seven years with an Indigenous youth organisation setting up the social networking side, an internet cafe funded under the TAPRIC initiative back in early 2000, and a remote youth multimedia program that has visited 30 communities in remote central Australia. I can speak from the experience of seeing the effect of that on young people in those remote communities, and the huge and positive impact that it had on even people such as petrol sniffers who have put down their cans to participate in using tools in which they have an interest and an affinity. They do not experience any sense of lack of advantage in that way because they become content rich to the internet with their stories, history and authority over the land in which they live.

The other people who have contributed to this are Rita Cattoni, who is now the manager of Indigenous Community Television, but when she wrote this submission she was the previous IRCA manager. She had also been the manager of Warlpiri Media Association in the very remote Northern Territory and had held that position for a number of years working with the Warlpiri people as they created their own media content and experienced the provision of broadband in that area. She was able to observe the effect of that on them.

Also, Daniel Featherstone, who is the manager of Ngaanyatjarra Media out in very central and remote Western Australia. He has experience in setting up 11 telecentres in remote Western Australia and has played a role in talking with the Western Australian government and their participation in a very innovative and successful project on those communities. Evan Wyatt is the technical support person for the Torres Strait Islands and top end North Queensland and Northern Territory in delivering the IRRR rollout. That is the RIBS broadcasting rollout of new equipment to update that to remote providers.

IRCA serves remote media associations, of which there are now eight in remote Australia. They are in Western Australia up in PAKAM, which is the Pilbara and Kimberley region; NG Media, which is Ngaanyatjarra Media; PAW Media, which is Pintubi, Anmatjerre and Warlpiri Media in western Northern Territory; TEABBA, which is at the top of the Northern Territory; QRAMAC, which has recently been launched in Queensland, and TSIMA in the Torres Strait Islands. Those remote associations serve approximately 150 communities where there are RIBS broadcasting stations on the ground with remote broadcasters delivering often the only communication service to their community and to communities where very often there are no landline phones to the people that live there at all, which is another issue.

CHAIR—We will have questions of you, if that assists you.

Ms Chellew—Are you happy for me to roll through my notes?

CHAIR—If you prefer to do that, but we will still ask you some questions.

Ms Chellew—I would like to go back to the experience that I have had with remote people using broadband. The findings of the young people that were sent out on these programs to work with remote communities found that there was very high engagement by young people in using computers, cameras and ICT generally. The programs were hugely successful and led to the re-engagement of young people with school on their communities. The teachers, in fact, were very interested in what they saw and in some cases communities looked to purchase laptops and so on to engage those program activities into the school.

Senator STERLE—Would it be possible to ask questions as we are going?

CHAIR—That might be a good idea, if you are happy with that.

Ms Chellew—That is fine.

Senator STERLE—I would like to go back to what you were talking about with the reduction in petrol sniffing because of access to communications. Do you have any figures for the communities and states?

Ms Chellew—At Docker River, for example, there was a very large petrol sniffing problem at the time and when the Deadly Mob youth media team went in there most of those young people were engaged in making films and using computers. They participated until 9 pm at night. They could not get rid of them because they were so connected to the activities that they were doing.

Senator STERLE—That stretched in the western desert area up there with the Ngaanyatjarra people.

Ms Chellew—Yes.

Senator STERLE—I was up there not long ago. They have their brand-new satellite and all their computers. It would be very helpful if you have got access to those figures if you could table them for the committee.

Ms Chellew—Yes. The other experience which is not so much remote is in Alice Springs itself with the internet cafe at Gap Youth Centre that we set up there with 16 computers on broadband. We had young people just running off the buses to the door and five local schools booking us eagerly to enable their young people to have access to computers on high speed, because at the time they had little access, all kinds of blockages, slow connectivity and so on. We had high connectivity and the young people from late primary to secondary were extremely engaged in producing remarkable work very quickly.

Senator STERLE—That is fantastic. Once again, with the re-engagement with the schools because of the advent of communications, if you have any figures around that it would be helpful if the committee could be supplied with that.

Ms Chellew—I will get them for you.

Senator MINCHIN—Do you have any evidence, either anecdotal or statistical about the sustainment of this interest in ICT, film and so on, that keeps kids away from destructive activity? In other words, often you get a phenomenon were it is exciting and stimulating for a couple of days and then they go back to the bad habits.

Ms Chellew—With the Deadly Mob program not only do the young people create content out bush, but in many cases they were not actually able to use the news broadband. They did not have it out there. They were to create the content. But when the community had approved all the little film clips, posters and whatever they had made, these were later put on the Deadly Mob website under their community webpage approved by the community and then people like the library in Alice Springs and a number of communities would then facilitate access to those people to view their content over and over again. I have had parents walk in off the street to the Deadly Mob office saying, 'We are so pleased with this program. We are so proud of our young Johnny who has created this movie. We are taking it to IAD and we are going to translate this film into language.' There was a real sense of creating social capital that could be observed over and over again on the internet. The Deadly Mob site would sometimes get young people come into the internet cafe and they would spend hours playing every little video, listening to all the stories, and just seeing stories of like-minded individuals telling their story—all kinds of stories. It was an extremely positive experience for them and led to a sense of affirmation and recognition—important things for anybody really. But for people that have been denied a lot of that this gives an instant experience of that.

I have seen some very positive things. I cannot emphasise the affinity of Aboriginal people for tools and for spatial skills. For example, a three-year-old was in my office and was shown by one of my assistants how to get into Microsoft paint on a computer. She was shown once. The next

day she got into paint by herself. She clicks the start button, accessories, paint and she was in. We see an affinity for the tools over and over again. People often make the mistake of thinking that people need to learn to read and write before they are given computers, but computers are a tool for literacy.

One of the things that I would like to say is that with all these RIBS remote broadcasting stations in 150 communities Australia-wide there is an opportunity, like with Ngaanyatjara Media, along with the remote media, the radio, and what used to be also video production, to aggregate IT and community access to broadband and computers. This could be a very powerful way for the government to be able to provide services, education, health and advice on political information that they need to make choices. Often Aboriginal people in remote communities have no idea how they are being governed or what is going on. Political information about how you are governed is taught at Year 8 level of school and many people have not been to Year 8. The radio and broadband are ways that this kind of lack of information provision, which is a right, can be addressed.

Senator MINCHIN—We have heard a lot about the lack of English skills in some of these more remote communities with the kids, but are you saying that is not an impediment to their capacity to really get into this?

Ms Chellew—No, that is right. It is not.

Senator MINCHIN—Do you think it helps them?

Ms Chellew—Yes. Computers, the internet, multimedia film and radio are audiovisual. They bypass the text barrier. Aboriginal people are advantaged to have an international community dying to hear their stories. There are masses of tourists coming through Alice Springs and Darwin wanting to connect in some meaningful way with Aboriginal people. There is a lot of wonderful knowledge of the land. For example, just recently at the Art at the Heart conference that was held in Alice Springs some key Ngangkaris and senior Aboriginal ladies got up to speak. It was reported by another woman that Kathleen Wallace knows 150 words for wind in Arrernte. The detailed knowledge and eloquence of the Australian countryside that Aboriginal people have shocked everyone. Their huge sense of wellbeing comes from being on their own country.

When I first came to Alice Springs I had no idea that there were so many Aboriginal languages. I thought there was one. There were approximately 300 Aboriginal languages with 50 now still being spoken. These languages are being spoken in these remote communities that we are talking about with the broadband now. There are opportunities here to empower these people and allow them to use the media tools to protect and preserve their culture, to lead to their own sense of cultural safety, which would lessen their angst and dissatisfaction with the Australian government, and would lead quite cheaply to a greater sense of wellbeing and self-determination.

CHAIR—You referred to the spatial ability of Indigenous children. Are you suggesting that there is a difference in terms of the learning ability or the capacity of Indigenous children versus others that might mean that there is a particular advantage in providing Aboriginal children with that?

Ms Chellew—That is right, yes. I am not an expert on that. I am just observing.

CHAIR—Are you able to point us to where that sort of evidence might be provided? Those people who have written your submission have identified it, but do not provide us with an answer. In item 4.6 your submission talks about selection criteria and it talks properly about the criteria for selecting the national broadband network in the broad. It states:

… population may not always be the most appropriate criteria, nor the presence of existing services.

One of the issues might be that a particular population or community might argue and demonstrate particular need or capacity to benefit from the national broadband network. If you are able to bolster that by saying, for example, that Indigenous populations can better benefit from access—

Ms Chellew—I can give you an example that gives some validity to that. Over in Canada there is such a thing as the Sunchild Cyber School. I am not sure what state it is in. They are using an Elluminate online session room to deliver first primary training to remote Indigenous communities within that state in Canada. It was so successful in engaging those young children that they had to develop a secondary curriculum and now they have had to go on to develop a tertiary curriculum because the young people have just eaten it up. They have reinvented themselves online. They chat to each other. They have learnt to type. They can show pictures. They can show PowerPoint. They can look at websites together and collaboratively access highly competent teachers who do not have to leave Toronto or wherever they live to teach these Indigenous children.

CHAIR—If you can point us to some expert opinion that, in your view, may demonstrates that Indigenous populations may better benefit from access to the national broadband network than some other populations or communities that may assist your cause and the committee would consider that evidence.

Ms Chellew—The Flexible Learning Framework, which is government funded, would have lots of examples of huge success themselves using tools with remote communities. I would refer you to my colleague Georgina Nou, who is a double degree teacher and has been researching on line pedagogy of learning. I have learnt a lot from her. She has taught me how to use web tools in a community development capacity.

CHAIR—Thank you. I note your submission does talk about selection criteria. You may want to take this question on notice. One of the issues that the government does have to consider and is in the process of considering is which tenderer may be successful and on what basis the tenderer will roll out the services. We have heard much evidence that perhaps the services should be rolled in rather than rolled out. We have also heard evidence that we need to ensure that the successful tenderer services those areas where there are no existing services, rather than their arguably being subsidised by the taxpayer to service that which is already serviced. Are you able to tell us what your organisation thinks should be the way that the national broadband network is rolled out in terms of expanding what you say here, or would you like to take that on notice? Your submission stated:

… population may not always be the most appropriate criteria, nor the presence of existing services.

Indeed, you may argue it should be the lack of existing services.

Ms Chellew—Yes. The criteria on which broadband is rolled out to a small community of say five people?

CHAIR—Who gets what?

Ms Chellew—Yes.

Senator NASH—We have had a number of witnesses talking about where it should start. From what you said today it would seem most appropriate that there is some kind of requirement to ensure that the underserved areas, such as the area you are from, come first in the list. What we are trying to get at is the benefits of starting in those underserved areas rather than the push that seems to be coming from some areas to start in the cities, which would mean that you would be five or seven years down the track.

Ms Chellew—No. Definitely start in the remote areas. You could have maximum impact on the failed state of remote Australia if you were able to roll out broadband to those areas. There are a number of things that have been mentioned in here about the exchanges and the upgrade of exchanges. Broadband has been rolled out but the local exchange has not been upgraded, so there is no access.

Senator NASH—In your submission you say that there is no ADSL on Hammond Island. You said that to get ADSL there would improve things enormously.

Senator MINCHIN—No, that is the next witness.

Senator NASH—I am sorry.

Senator MINCHIN—Torres Strait Islands.

Senator IAN MACDONALD—I feel that all Australians are the same and it annoys me that someone arbitrarily says, 'Sorry about the two per cent. You're not going to get it.' We cannot find out where the two per cent is, but you are giving us a fairly good guess as to where it might be, and that to me is offensive. That brings me to the question that I want to ask you. What submissions have you made to government about the provision of this? I see from your submission some of the benefits and we have heard of them. I do not think you have to justify benefits any more than I have to justify benefits where I live. I am just interested in what submissions you have made to government, bearing in mind that this is a committee of parliament rather than a committee of government and there is quite a big difference. How have you made your view known?

Ms Chellew—I have only been in the IRCA management position a couple of months now, so the people that prepared this document that you have before you are not here today delivering it. I am now researching this area myself and in discussion with the remote media managers and the boards of remote media I am preparing a model that I will put to government.

Senator IAN MACDONALD—How far away is that? Bear in mind this is supposed to be moving very quickly. It is supposed to be all done and dusted by Christmas. None of us believe that is going to be the case, but that was the request for tender.

Ms Chellew—It will probably not be until February next year. If you were to ask for that then I could bring it there—

Senator IAN MACDONALD—As I said, again, you should be really making submissions to the department.

Ms Chellew—DBCDE.

Senator IAN MACDONALD—After all, we taxpayers are going to put in $4.7 billion into this and it is not so people in St Lucia in Brisbane can get a faster speed. It is so that all Australians can get it.

Ms Chellew—I have already been discussing this with the network manager for the NT of DEEWR, under which IRCA is currently funded through the IBP. One of the concerns of the people with whom I work is that IRCA and the media association should be funded under DBCDE. That would be a more appropriate area for it to be funded under.

Senator IAN MACDONALD—Your submission states that the IRCA would strongly recommend that a subsidy be implemented for the 3G network cards, and I suspect elsewhere in your submission you indicate that for everywhere. Of course, that is where the government does have an involvement in subsidising areas that are not commercial. I do not think the taxpayer should be contributing at all where they are commercial. It is fairly important that you make these views—

Ms Chellew—There may be a cost there to government, but there might be a saving in delivery of education, health and a whole lot of other areas by a model whereby these services can be delivered in quite an inexpensive way.

Senator IAN MACDONALD—They say Indigenous people are disadvantaged. I say it is remote people, whether they are Indigenous or otherwise, are disadvantaged. In Australia, of course, they should not be. What you can get here at St Lucia you should be able to get elsewhere. I recognise it costs money, but that is what governments are for. This is a good submission even though you did not do it, but I think it is important to make your views known to the government, and of course this committee takes into account what you say.

Ms Chellew—Thank you for that.

Senator STERLE—There are a lot of positives. It has been a fantastic announcement and now it is the hard work of getting it done. All I can say is that we can only go forward and really look forward to it being rolled out.

CHAIR—Ms Chellew, do you have any other issues that you would like to draw to the committee's attention? We interrupted your flow.

Ms Chellew—No.

CHAIR—If there is anything you would like to highlight then please feel free to do so.

Ms Chellew—I would like to draw your attention to the successes in Western Australia with the Clever Network scheme and the 'last mile'. They seem to be successful approaches that have been reported to my organisation and I encourage government to have a look at what has been done quite successfully there.

Also, another point that we would like to raise is that with the rollout of broadband, which is a wonderful thing, along with that goes the other issues of access to computers to take advantage of the broadband and access to ongoing training to use the computers to access the broadband, and operational costs to maintain that equipment. This should all be part of the package. In terms of remote Australia this all needs to be in the package from the beginning or you are setting it up to fail and to be another disappointment.

I would like to draw your attention to item 4.1, the wireless technologies and the delivery of broadband to remote Australia. This is the idea of implementing a common wireless network within communities from the broadband brought into that community, having then a common wireless network from that to provide content to all the organisations and individuals there in some aggregated way that reduces infrastructure costs. In some communities that I have seen there are satellite dishes everywhere for each organisation. It has been very disorganised. Obviously a huge amount of money has been spent by a number of different departments not working together but in silos. There could be a much simpler and cheaper way of rolling this out with this idea of a common wireless network within community. If Aboriginal people have laptops that are on wireless and they travel to different communities within their language speaking area, then wherever they open up they are going to have access to the internet without going through a lot of rigmarole.

Senator IAN MACDONALD—You mentioned about satellite not being perfect. I apologise for being late. I am not sure how technical you are, but are you aware of any prospect of satellite being made perfect?

Ms Chellew—No. I am not very technical in this regard. I can only quote from what has been said here with the current satellite with what is available and that there are a lot of obstacles with that. I do not know the answer to that question.

Senator IAN MACDONALD—Whilst I think 100 per cent of Australians should have access to broadband, I acknowledge that in some cases the actual physical infrastructure is very difficult to get there. Whether there is a prospect of getting a better wireless or a better satellite communication is something that has to be looked at further. Again, that is a technical area that I am not familiar with either.

Ms Chellew—I heard recently at a conference about some discussion in America about a whole new way of providing internet to the American Native Indians. I could get back to you on that.

Senator IAN MACDONALD—It is all moving so quickly. What we might use in two years time probably has not been thought of yet.

Senator STERLE—That far ahead?

Senator IAN MACDONALD—I did say I did not have any technical expertise.

CHAIR—Do you have any further points that you would like to put to us?

CHAIR—No, I do not think so.

CHAIR—Thank you very much for your attendance and your organisation's submission. We look forward to hearing from the Torres Shire Council by teleconference. We will break temporarily until they are online.

Proceedings suspended from 9.43 am to 9.50 am

McCARTHY, Mr Bernie, Chief Executive Officer, Torres Shire Council

STEPHEN, Councillor Pedro, Mayor, Torres Shire Council

Evidence was taken via teleconference—

CHAIR—Welcome. The evidence that you are providing to the committee is public. If at any stage you wish to not provide evidence in public please say so and the committee will consider the next steps. It is an offence and potentially in contempt of the Senate to inappropriately attempt to influence evidence provided to a committee of this nature and it is also potentially in contempt of the Senate to give evidence which is false or misleading to the committee. If at any stage you wish to object to answering any of the questions that I or my colleagues put to you then please say so and the committee will then consider the steps from there. Thank you very much for your time today. Do you wish to make a brief opening statement to the committee?

Councillor Stephen—I would like to briefly outline our region and the location in which we are. I thank you for the opportunity that you have given us to provide a submission from the Torres Shire Council. We have also spoken to the newly formed Torres Strait Island Regional Council to get their endorsement so that we can talk about the Torres Strait as a whole. The boundary of the Torres Shire Council does extend to the international border and down to 11 degrees, which is south of Jardine. The recent local government reform in Queensland has actually formed two other regional councils within the boundary of the Torres Shire and that is taking into consideration the DOGIT area, the deed of grant in trust area, which is now under the state. That is actually the Torres Strait Island Regional Council which is now the council amalgamated from the 15 island community councils, and the Northern Peninsula Area Council which has amalgamated the five Indigenous communities in Cape York, which is made up of three Aboriginal communities and two islander communities in the Cape.

The total population of the region is around 10,000 specifically for whom the Torres Shire Council administers the essential services, or the local government services. We deliver services to half the population of the region because Thursday Island, which is our centre, is the service hub for the region. The region covers around about 49,000 square kilometres which is an area of water dotted with over 100 islands and cays in the Torres Strait.

One of the main things that has happened over the last 20 years that has been beneficial for Torres Strait is the large infrastructure resources on the ground for essential services right across our region. We are working closely with the Torres Strait Regional Authority, which is the Commonwealth arm that was actually the remnant of what ASIC used to be. The TSIREC is the Commonwealth funding body in the Torres Strait from which we access a lot of the funds. We in the local government area utilise them to have access to grant funding, or make submissions for funding for both hard and soft infrastructure across our region.

One of the main difficulties in our region has always been access. I think the opportunity that has been given to us to address the committee today is an honour and a privilege because in the Torres Strait in terms of delivering services without access to that information technology of broadband and the internet the costs would be enormous for us to meet with the new

amalgamated council and for council to honour their submission under the Local Government Act where we get to meet every month with our sister council, the newly formed Torres Strait Island Regional Council. The council will meet at one of the outer islands, one of the major islands that has the infrastructure to hold their meetings. It would cost them around about $40,000 every month just to take everybody to the island, which is a really costly exercise.

I think our area also benefits from the education and the health services, not only the health centres that have actually been established right across the Torres Strait and the North Queensland area but also the new schools. As recently as yesterday we finished having a meeting with the Regional Education Council which has identified the enormous assistance we have received from video-conferencing and being able to access those services. Those services were there but we could not utilise those services because again we were having problems with our access to the information technology.

This morning we would like to present the technical advice we have gathered from an organisation that has worked here in the region. One is from Mr Russell Barkus, who has over 27 years experience. He has worked with Telstra before but he is now running his own service and is being utilised by all government agencies across the Torres Strait region. He also operates a practical computer service which is now being commissioned by the three local governments to bring all our computer systems online.

Mr McCarthy—Thank you for this opportunity. I would like to stress the importance of good communication and broadband to our local regional airport, which has international significance as well with the connection to PNG. The updated figures of the flights per month are $6,231. There are domestic movements in the region of course, which are fairly extensive. It is very important that we have the best possible communication facility on Horn Island. That is where the airport is operated from by the Torres Shire Council. Horn Island is an island that we see as a satellite development from Thursday Island, which is almost built out and we feel that there will be land and housing subdivisions over there. It is only about one and a half kilometres by water, of course. There are other close islands like Prince of Wales where people do live. They need to have proper access. Also, on the top of Cape York we have land under our control. A lot of tourists come up there from the south and they stay in place called Punsand Bay. There are other camping grounds outside of our jurisdiction but they are all in that area and they need the facilities.

People are trying to ring home and keep up communication. We have had a push on tourism. It is a developing industry up here. We see that we need this broadband facility of a national standard to continue that. The mayor has stressed that we do have two technical reports. Practical Computer Services are the main local government IT provider in Queensland. Their knowledge is fairly extensive. They indicate problems right across the region. I have to stress that some are within our shire and some are not. There are the neighbouring Torres Strait Island Regional Council shire and the NPA Regional Council. Russell Barkus, of course, is a legend up here in terms of telecommunications. He does a lot of work for us. He has provided comments on the need that he sees for improvement in broadband. Thank you for this opportunity.

Councillor Stephen—Over the last 10 years we have seen the upgrade of the infrastructure. I am also the chair of the Regional Health Council established in the Torres Strait. It is a ministerial appointment under the Minister for Health in our region. My responsibility in health

does cover all of the Torres Strait and the NPA. One of the important things was that there have been millions of dollars spent on building new health centres right across the Torres Strait that now have the capacity for videoconferencing on each of the islands similar to all the new schools throughout our region. They have the videoconferencing equipment installed in all the schools, but we cannot have access because of the actual network.

Mr McCarthy—Yes, the whole set-up. We have got a college in this regional space and it is absolutely important that they have this facility to work at all community levels.

Senator IAN MACDONALD—Is it a bit hot up your way?

Councillor Stephen—It is leaning towards the doldrums now and we will be expecting rain any time now.

Senator IAN MACDONALD—Do you have anyone but Telstra up there at the moment? Does Optus work?

Councillor Stephen—Optus came up last month just to do a feasibility study to establish the broadband 3G. Is it the Next G network?

Senator IAN MACDONALD—I think Next G is Telstra.

Councillor Stephen—They actually came up here and had a look. The problem we have is actually getting access to land. I think they may have been negotiating with Telstra because at the moment that is the only location that size to service the other islands. Telstra has the monopoly on the access up there.

Senator IAN MACDONALD—How do you communicate with Saibai, Darnley or Mer?

Councillor Stephen—Just by a landline.

Senator IAN MACDONALD—It is a marine cable across to all the islands, is it?

Councillor Stephen—I think the network that Telstra has is actually satellite.

Senator IAN MACDONALD—You are saying that everyone has videoconferencing but it does not really work or you do not have access to it. I did not quite understand that.

Councillor Stephen—All those new centres have an additional room specifically for the videoconferencing because they meet every week. The intention was to actually have a network through the videoconferencing but, because of the location and the access to the network, we virtually still have to fly everyone into TI for training.

Senator IAN MACDONALD—Are you saying they have got the rooms there and the equipment but no connections? Is that what you are saying?

Councillor Stephen—Yes, that is true. The rooms and the equipment are there. About four years ago the local radio station accessed some grant funding called Island Watch that eventually

established the Saibai radio, or the community broadcast radio, throughout each of the islands but they can only broadcast locally at the island. They cannot connect you to the cluster group.

Senator IAN MACDONALD—Can I ask you to explain again what Russell Barkus's position is? I think you said he used to be with Telstra but he now has his own private company. What exactly does he do?

Mr McCarthy—Russell Barkus is a telecommunications technician and electrician who resides here on Thursday Island. He has worked in the Torres Strait and the Northern Peninsula Area region for the past 27 years and he services both government and private installations throughout the region. His valued local knowledge and experience provides him with an in-depth knowledge of telecommunications infrastructure and weaknesses in this vast area which is separated by large distances over land and sea. He knows the telecommunications process backwards in the Torres Strait and the NPA region.

Councillor Stephen—He is the only local provider at the moment in the Torres Strait.

Senator IAN MACDONALD—Is he an internet service provider? Do you work through him to connect to the Telstra network? Is he like Austarnet or any of those other service providers?

Councillor Stephen—No. He is only—

Senator IAN MACDONALD—A technician?

Councillor Stephen—He is not a provider.

Mr McCarthy—He is a contractor. For example, he assists this computer company that has come up. He has been working for them to help install all the connections right across the region.

Councillor Stephen—I think the reason the contractors come from down south is because they have been commissioned by the TSRA. As we speak the TSRA is moving the native title unit from the TSRA building at Victoria Parade back into the old National Bank, which used to be the legal aid centre, and Mr Barkus is actually doing all the wiring and is laying the cabling in the building as a subcontract from TSRA.

Senator IAN MACDONALD—The main communication to Thursday Island though is by a landline up the Cape and across the strait, is it?

Mr McCarthy—I believe so, but I stand to be corrected.

Councillor Stephen—From a layman's view, I think they actually do both with the landline and cables.

Senator IAN MACDONALD—What sort of speed do you get with the council's computers.

Mr McCarthy—It is not too bad but it can vary sometimes.

Senator IAN MACDONALD—What do you get—52 kilobits per second or are you into the megabits?

Mr McCarthy—You are talking to the wrong person. Generally on Thursday Island it is reasonably good but there are variations. I must say in the past as we get onto mobile phones and that we still get problems with those. In the last few weeks I have had a number of days when the mobile phones have been out.

Councillor Stephen—Can we get that information through?

Mr McCarthy—As to this technical information, we would like to be able to forward that down to you. We have only been able to access it in the last couple of days.

Senator NASH—We have had some witnesses appear before us around the issue that there is not a requirement for the successful bidder to start rolling out the national broadband network in the more remote areas. They could start rolling it out in the cities. I think I probably know the answer to this question but you would obviously prefer to see any start of the roll-out of the network in more remote areas like yours?

Councillor Stephen—Yes, I would back that 150 per cent mainly because in remote areas, especially here in the Torres Strait, we have a lot of implications with the international border issue as well. When the CEO talked about a lot of people coming in from the southern parts in terms of what we are predicting from tourism, we have 50,000 people commuting across Torres Strait annually through the free border movement, the Torres Strait Treaty, so people from the western province or Papua New Guinea can travel annually across the Torres Strait and through all the islands here. I think that most of the people now carry a mobile phone hoping that that is their lifeline if they are stranded out at sea.

Senator NASH—You mentioned ADSL in your submission. You say in one part of it that the airport has not got ADSL. You then go on to say that you think the capability to have it is there but you say there are not enough voices to make it happen. What did you actually mean by that?

Mr McCarthy—That is a good question. I was relying on the airport manager and he provided that statement. I believe that we need to further investigate the possibility of being able to get ADSL. I cannot expand on it any more than that.

Senator NASH—That is fine. Perhaps you might just like to provide that to the committee. You can take it on notice if you like.

Mr McCarthy—I am quite happy to do that.

Senator NASH—I am assuming that it perhaps means that the capability is there but Telstra are not providing it. If you could just provide to the committee the reasons why you have not got ADSL if the capability is already there, that would be really useful, thank you.

Mr McCarthy—In all honesty, he made a statement that we do not have it. Then he went on and made the statement and I thought I was better off to leave it there. It is something that we can explore.

Senator NASH—We are very happy with that. If in your own time you can just let the committee know, that would be very useful, thank you.

Senator STERLE—Just in case the Torres Strait Island might be part of the two per cent that the roll-out of the national broadband network does not reach, the government is looking for suggestions for policy and funding initiatives to provide high-speed broadband. Given that you stated that the area is totally reliant upon wireless and satellite broadband services, how could the provision of wireless or satellite broadband be improved for Torres Strait residents? You can take that question on notice if you need to.

Mr McCarthy—You are talking to two non-technical people here. I do not know the method as to how, but we would love to see it being fully explored. There is potential to go down that track so that we are getting the standard that we believe we deserve.

Councillor Stephen—One of the main problems in the Torres Strait—for example, the most recent incident that happened in February was an incident involving a rape trial victim from one of the most north-western islands of Mabuiag. In terms of getting a response from the emergency services, whether it was the police or the hospital themselves, to respond out to the community which is only about 170 nautical miles north of Thursday Island, it took over 48 hours to actually respond to that. The Torres Strait region as a whole was condemned through the media by the different government agencies and the community itself. That got publicity mainly because the response time could have been much quicker if access were available. Because Mabuiag at that time did not have access because the mobile phone system was actually down they could not get any contact whether by landline or a message back to Thursday Island. It is just that attempts have been made to connect some islands and then some of the islands are left out. It gives constituents a false understanding because they just jump in their tinnies and expect to actually have access by the internet.

Senator STERLE—It has been suggested maybe Russell Barkus could drop us a note or put forward some suggestions if you have a chance to ask around the business community?

Mr McCarthy—I have actually spoken to him earlier today and I actually raised that possibility and he said he would be delighted to do that. We would be happy to do that. I have also been working in conjunction with the council's IT officer, a guy called Don Benjamin. We had limited time in the preparation of the technical notes, but we would be quite happy to expand on that.

Senator STERLE—Thank you. Maybe through the chair I can be bold enough to suggest that you might write to Mr Barkus to seek some suggestions.

CHAIR—We are able to do that. Thank you very much for your time and perseverance with our teleconference today?

Councillor Stephen—Thank you for the opportunity. Can I close by just reading some statement that we have actually put down?

CHAIR—Yes.

Councillor Stephen—The lack of mobile transmission on all the islands is preventing fast internet access. Most computer updates and antivirus downloads take all night at dial-up speed. Islands that have mobile rates on Telstra tower can have internet access via their phones which can be updated with a data plan and laptop broadband cards work okay on these islands. Business and tourism cannot be engaged these days without good email and internet access. There is no mobile base at Seisia, which is actually the most northern community on the mainland, which makes it difficult for many or all tourists that visit the top end.

For the trades that are based at Seisia, business is increasing. Seisia is the main entry point for most of our trades during our work in the Northern Peninsula Area and they need good mobile and internet access. All the tourists camped at Seisia want to phone home, check emails and send pictures about their adventures but all this means is revenue for Telstra. Having good mobile phone coverage eases the high cost burden on the copper network which is always suffering damage in the stormy tropical environment of the Torres Straits.

If the Torres Strait and NPA are to develop economically and socially and engage the mainstream society it needs good broadband access for all, particularly as we are in a remote area and physically separated by lots of water and distance. Lastly, many people move about in the area with their jobs and accommodation, so mobile broadband is more practical than landlines. Thank you.

Senator IAN MACDONALD—Thank you for that. That is a very important summary. The tourism industry is really getting going there. That is very important. The health and the local engagement area is also very, very important, so thank you very much for that summary.

CHAIR—Thank you very much, gentlemen.

Councillor Stephen—Thank you again for the opportunity.

Proceedings suspended from 10.23 am to 10.40 am

KELSO, Dr Ross, Private capacity

CHAIR—Welcome. I think you have been present during proceedings this morning, but I will run through the formalities very quickly. The evidence that you are about to give to this committee is public. If at any stage you wish to provide evidence in private, please say so and we will give consideration to such a request; we will do likewise, if you object to answering any of the questions that I or any of my good colleagues choose to put to you. The evidence that you provide to the committee is protected by parliamentary privilege. It is unlawful and a potential contempt of the Senate for any party to attempt to influence you or otherwise inappropriately interfere with your evidence, as it is to provide evidence to the committee that is in any way false or misleading. Without any further ado, welcome again and, in anticipation of your evidence, thank you for appearing before us today. Do you wish to amend or vary your submission in any way?

Dr Kelso—No.

CHAIR—We invite you to make a brief opening statement, after which we will ask you questions.

Dr Kelso—Thank you. I am currently a director of the Internet Society of Australia and I am also a director and Chair of the Consumers' Telecommunications Network. Both organisations have made submissions to and have appeared before this Senate select committee. The submission that this committee has marked as No. 24 was made by me in my private capacity and it has not been approved by those two organisations, although I doubt that they would disagree with what I have written.

The advent of a national broadband network offers a generational opportunity to reassess the appropriateness of Australia's telecommunications policy and regulatory environments. If competition continues to be central to national economic and social development, it is absolutely essential that the access regime applicable to the NBN be effective, as it must cope with ongoing technological innovation and creative commercial challenges. However, we must never lose sight of the fact that the telecommunications industry exists only to serve end users.

The government's request for proposals prescribes open access, which is a highly laudable concept and, I believe, especially pertinent to the national broadband network. Unfortunately, my research shows that the Australian telecommunications industry has been conditioned to accept a far more limited form of access which has singularly failed to promote competition, particularly involving recent examples of next generation wireline access infrastructure. Only open access, as defined in the RFP, is in the better interests of end users. Open access provides individual customers with a choice of service providers offering the promise of choice in accessing all types of information and entertainment services plus the freedom to communicate or publish via channels of the customer's choosing. Choice implies competition and service provision, and it is competition that offers better-value propositions and drives innovation.

The national broadband network inevitably will involve the widespread deployment of optical fibre into the access network. The architecture and design of such optical fibre is the crucial

determinant of the network's ability to accommodate competitive service providers in a non-discriminatory manner. It is critical to factor this into the regulatory considerations that the government is about to make. On the other hand, we must never forget that optical fibre in the access network also presents the greatest opportunity for dominating the market in delivering to end users services that are bandwidth intensive and non-mobile. Unless this new access network has been appropriately designed, true service based competition will be effectively chilled.

This Senate committee, in my view, offers the only opportunity for the consideration of public submissions by a body independent of the department or its minister. It is critically important that all processes involved in determining the national broadband network be fully transparent. Thank you for giving me the opportunity to be heard.

CHAIR—Thank you. Senator Minchin, would you like to lead off with questions?

Senator MINCHIN—Thank you, Madam Chair. Dr Kelso, thank you for your attendance here today and for your very good submission. I have just a few questions. You have spoken of the importance of the regulatory arrangements. A number of the submissions we have received have been quite critical of the process in that there is no regulatory framework established; that the bids have been requested, in a sense, in a vacuum; and that the government should have established the regulatory arrangements before seeking tenders. Would you have a view on that proposition? Has the government got it right or should it have established the regulatory arrangements first?

Dr Kelso—I totally agree with the sentiment that the cart has been put before the horse; the regulatory arrangement of the framework should have been done first. In all fairness, if the government had not changed and Senator Coonan, as minister, had proceeded down the path that she was going to take, I would have made the exact same comment; in other words, the regulatory framework should be made public well in advance of the RFP. The government, to its credit, has called for public submissions on the regulatory framework, but that is it. The submissions are to be evaluated by the expert panel, and who knows what their conclusion shall be? We will never hear of that. All we will hear is the result of the RFP process. This is very unfortunate. The only time at which there will be any public exposure about the regulatory framework will be when parliament resumes next year and presumably changes to the legislation will be sought.

Senator MINCHIN—I want to go to that. You have properly made the point about transparency and openness in this process. It is not too late for the government to establish transparency in the process. What specifically do you think the government should do from this point on? The bids close next Wednesday and, as far as we know. Then the panel has eight weeks in which to make a decision, the ACCC has six weeks in which to submit its written report to the panel on its assessment of the regulatory implications of the bids and, presumably, the government will receive a recommendation from the panel. What do you think the government should be doing to enhance transparency in this process? For example, should the tenders be made publicly available? Should the report of the panel be made publicly available? Should the ACCC's report be made available publicly? Is that what you are suggesting?

Dr Kelso—I would say yes to all of those. However, in particular, I would say that the eight-week and six-week time lines that you have spoken about are really not that critical. There

is nothing urgent about implementing this national broadband network. Things can slip by for a few more weeks, a few more months or whatever.

I would recommend that the very first thing to be done is for the government to issue a discussion paper based upon its assessment of the submissions on the regulatory framework and this discussion paper then be open for public evaluation. In other words, we have had a large number of public submissions and they should be condensed into a discussion paper offering a preferred option and some subsidiary options, and then that paper should be open to public evaluation. That is the very first step that should be taken, in addition to the public exposure that you have mentioned. As I have said in my submission, I am very concerned that a lot of the details of the bid selected will be hidden in commercial-in-confidence agreements, and that is extremely bad.

Until now, all the changes that telecommunications have undergone—moving from the government monopoly of the Postmaster General's Department to the government-owned company of Telecom Australia to the duopoly phase and then to open competition in 1997—have been supported by significant public disclosure and discussion. With the national broadband network, we are now moving into an era where I believe that some of the very key facets will be hidden from public view in commercial-in-confidence documentation, and that is bad.

Senator MINCHIN—As you properly say—I do not think the government has been sufficiently up-front about this—presumably there will need to be quite substantial legislative and regulatory change to facilitate the building of this NBN. That will involve the parliamentary process and the government putting out a bill that will then go through the parliament. Are you saying that, of itself, that is not sufficient opportunity for the public to participate? I presume there will be a Senate inquiry into the bill that the government puts up.

Dr Kelso—Certainly, opportunities will be there for the public to participate, but I also suspect that there will be elements that will not be divulged, because they will be commercial-in-confidence.

Senator MINCHIN—Is that not a reasonable defence for a government? Whoever does build this thing is going to have to put in presumably at least $10 billion their own money.

Dr Kelso—I would maintain my concern about matters being held to be commercial-in-confidence even if the government were not contributing $4.7 billion. Under the previous government, where it was going to go through a roughly similar process without contributing public moneys, I would probably be expressing many similar concerns. The concerns are heightened with the provision of public moneys. Basically, even without the provision of public moneys, a new monopoly was to have been established one way or another, and there would have had to have been legislation to have supported that. But the addition of public moneys certainly focuses attention.

Senator MINCHIN—Based on your experience, do you operate on the presumption that inevitably this $4.7 billion is going to have to be a direct subsidy and there is no way that the government could be getting a return on that money, as they suggested in the lead-up to the last election?

Dr Kelso—That is an interesting point and it is still open to daylight as to what is going to happen. Is it going to be a subsidy or will there actually be a return? We do not know whether the $4.7 billion will simply go into a general bucket and then the winner will expend that money in one way or another. Alternatively, will it be focused on rural and remote aspects of the network? In that case, you would not want to expect a return on it. That is the reason why carriers, particularly Telstra, currently are not rolling a network out in rural and remote areas, because there is not a commercial return. These are matters which are certainly not known.

Senator MINCHIN—But the government has said that it is fibre-to-the-node to 98 per cent of Australian homes and businesses with a 12 megabit per second speed. Is it possible to do that commercially? The government has said that it still desires to get a return on its investment—that is, that the whole project is commercial. Based on your experience, is that realistic; or is it inevitable that, to do that, there would have to be a government subsidy?

Dr Kelso—On the basis that most people would expect the $4.7 billion to subsidise uneconomic provision, I would have to conclude that, no, there would not be a return. After all, why does the government get involved in businesses of this nature? It is mainly where the market does not work. So I would say, no, the government should not expect a return on the investment. But, in return, the government should expect to exercise some degree of control to determine the outcomes; in other words, where this money is to be applied, there should be very rigid controls as to the nature of the rollout, when the rollout is to occur and the penalties applicable if performance does not meet requirements.

CHAIR—So the government should not expect a return in certain areas and, therefore, should place conditions on the provision of that money. Are we speaking of 'certain areas' that are underserviced in the existing market? Just to cut out a few things, in which areas should the government not expect a return?

Dr Kelso—Broadly, rural and remote services. I am talking particularly about areas that the recent RTIRC report from the inquiry chaired by Dr Glasson was directed towards.

Senator MINCHIN—Are you familiar with the OPEL project?

Dr Kelso—Broadly speaking, yes, I am familiar with that.

Senator MINCHIN—Are you sufficiently familiar with it to have a view as to whether the government was right or wrong to cancel that project?

Dr Kelso—I think that the current government was wrong to have cancelled that. That said, I am not all that sure that the OPEL project would have met its objectives, from what I have heard of the technical nature, but it would have gone a long way towards it. However, clearly, while its technology will be an essential technology along with optical fibre, I am not necessarily sold on fibre-to-the-node. I am particularly concerned about prescription of fibre-to-the-node technology for the national broadband network. I believe that, if it is to be prescribed as fibre-to-the-node and nothing more, it is a retrograde step.

Senator MINCHIN—That is, in fact, what the government has done.

Dr Kelso—I know. I believe that prescription of fibre-to-the-node is retrograde. In particular, if we move down the path of the network being engineered for fibre-to-the-node where it makes it difficult for it to go beyond that to fibre-to-the-home, it is a retrograde step.

Senator MINCHIN—Technically, does it make it difficult? Does that mean that you cannot do fibre-to-the-home at some later point?

Dr Kelso—You certainly can but, as a result, it means that it is very much in the hands of that network provider and that network owner basically as to whether they then hold everyone hostage. In other words, we would end up having a rerun of all this debate about fibre-to-the-node network; we will have it all over again when we find out that fibre-to-the-node itself, in another 10 years, becomes a limiting factor.

CHAIR—Indeed, we have heard evidence from other witnesses that it must be engineered so that there is the capacity. The tender must roll out with the engineering being done so that there is capacity to further develop, if it is done in a limiting way thus far.

Dr Kelso—I totally agree with that. In fact, I would go one further. The request for proposals has said that there is to be a minimum, I think, of 12 megabits per second. A real problem exists if we focus only on services and not on the underlying infrastructure. If the government regulates the services and not the infrastructure—in fact, an underlying problem with part XIC of the Trade Practices Act is that it regulates services and not infrastructure—we will find that, where optical fibre is provided that is only to be fibre-to-the-node and only to provide 12 megabits per second, we potentially will have a bottleneck.

In terms of doing work in the public interest, the government should be putting $4.7 billion into a network that we know at the outset is capable of delivering far more than 12 megabits per second as technology goes on. Optical fibre itself is no limitation on bandwidth, as it is capable of providing gigabits of bandwidth; however, the limitation starts from the point at which you get to the node onwards. So the optical fibre itself is a godsend, but the technology in the nodal point and the copper pairs that run from there are potentially a bottleneck. The regulatory framework should be concerned with the potential of the infrastructure and not just with the provision of 12 megabits per second; otherwise, we will simply have a rerun of this. We will be having Senate hearings all over again in another 10 years time.

Senator MINCHIN—You have properly put a big focus on open access. Is it your view that open access is achievable even if the builder and owner of the NBN is not structurally separated from any retail or service provider, or do you think that its being separated is fundamental?

Dr Kelso—In my submission, I did not mention structural separation—

Senator MINCHIN—Yes, I noticed that.

Dr Kelso—for two reasons. One is that most other submissions had beaten the matter to death. The second is that, strictly speaking, it is not absolutely necessary. It is desirable and, in practice, probably highly desirable, but it is not absolutely necessary. If you set up the correct regime, you can achieve open access without structural separation. It is just that the regime, which was implemented mainly in 1997 with part XIC of the Trade Practices Act—it is the

regime which we are all familiar with now—is such that the dominant operator, Telstra, can subvert the intent of that regime very easily. My fear is that, without structural separation, Telstra, if it were to be the winner of this tender process, may well subvert whatever is agreed to.

Senator NASH—Just following on from that, perhaps you would not mind providing the committee—I am very happy for you to take this on notice—with exactly what you would like to see as those regulatory requirements. If, indeed, we were not to go down the path of structural separation, how would you like to see that regulatory framework operate? Perhaps you could give that to us in a reasonable amount of detail, which is why I am happy for you to take it on notice. If we are not going to look at structural separation, we need to know what the next-best thing is.

Dr Kelso—I could do that on notice, if need be. However, it would come back to what I have dealt with in the submission, which is a prescription of what open access is to be. As I have said, we do not know what open access is to be, because we do not have it at the moment. The Trade Practices Act does not prescribe open access. Open access means a right of access. Under part XIC of the Trade Practices Act, we do not have a right of access.

Let me explain a situation where we do have a right of access. At the moment we have a copper-pair based public switch telephone network, commonly known as a PSTN. This telephone network is an open access network. The fact that it was set up by the PMG department initially as a monopoly is a separate matter; it is a public access network. The internet first came to Australia via dial-up. You as an end user are able to connect a modem to the telephone line and dial the number of an ISP, an internet service provider. That was all done on an open access basis. Nobody said that you could not do it. All you had to do was to buy a modem that was approved by the regulator, which at the time was Austel, on the basis that it would not do any harm to the network and then you could freely access the internet. That was an open access network. There was no question of your not being able to access it. You could access it; it was your right to access it. But now we are moving to optical fibre technology where you, as an end user, and a service provider do not have an automatic right of access. It is an entirely different philosophy.

When you travel on the road, as long as your car or truck has been designed according to the appropriate rules and regulations, you have the right to drive that vehicle on the road. As long as you do not do any harm or exceed the speed limit et cetera, you have that right. That is the right of open access, the right of carriage. We have that with the PSTN at the moment and that was how the internet took off in this country. When we move towards an NBN, we will not have that right.

So, basically, the answer to your question is that the regulatory framework is to establish the right of access rather than having to be permitted. It should be automatic. It should be permitted and not fundamentally operated by a gatekeeper who says, 'No, you can't have it,' or, 'You can have it only in these limited circumstances.' It is a totally different philosophical framework.

Senator MINCHIN—A number of submissions we have received are from people who are concerned that, if a fibre-to-the-node network is rolled out to 98 per cent of homes and businesses at a cost of $15 billion 'going north', inevitably it will mean that people will pay more for a service which, in many cases and for many people, will not be much different from

what they currently have. Is it technically possible to keep the copper network running in parallel; or, in your view, is that absolutely impossible and, if we do go with fibre-to-the-node, inevitably the copper has to be, in a sense, disconnected so that people would then have no choice but to go with the NBN for whatever price it was on offer?

Dr Kelso—Having been an engineer with Telstra, I think I can reasonably understand the arguments that have been used in this case. Technically, it would be possible not to cut away the copper pairs at every node, but it would be very messy. The whole reason for optical fibre being extended out to nodes is, in fact, to cut away that copper, because the copper increasingly is a maintenance hazard. I would agree with the concern that, once the fibre extends to a node and the copper is cut away, it raises a whole new set of problems as to how competitive access can be gained at that nodal point.

Senator IAN MACDONALD—Dr Kelso, as I said to you when we were coming up together in the lift, I was very impressed with your submission. Thank you very much for it. It brought together in a very readable document for the uninitiated a lot of the submissions that we have received. You mentioned earlier to Senator Minchin that you thought it would be a good idea to release a white paper on what the regulatory regime might be. As I understand the request for proposals, you put your tender in on the basis of your suggestion of the regulation. Therefore, if the government were to pick up your suggestion and put out a white paper inviting comment on what the regulation should be, it would mean—I am thinking, for example, of Telstra, who tendered on the basis of their view of the regulation—that the whole tender process would just be irrelevant and stupid. Would you agree with that?

Dr Kelso—Do you mean if the tenders still went in on the 26th and the white paper came out later?

Senator IAN MACDONALD—Yes.

Dr Kelso—Yes. I would agree then that, with that timing, the process would not be satisfactory. You would really have to slip the 26 November date.

Senator IAN MACDONALD—I understand that is not going to happen.

Dr Kelso—Yes.

Senator IAN MACDONALD—Telstra or anyone else would have put in their tender or proposal on the basis of their view of the regulation. However, if the government were to pick up your suggestion, which I think is a very sensible proposal, that they collect all the ideas for regulation and put out a green paper first and then a white paper on what it should be—which, in my view, would be the way to go—it would mean that the whole tender process to date would be an absolute waste of time and effort.

Dr Kelso—I agree; however, the closing date has already slipped. I was thinking more along the lines that, the date having slipped once already, it could always slip again. November 26 was not the original date.

Senator IAN MACDONALD—I think the minister has been fairly committed to a 26 November closure date.

Dr Kelso—I could be wrong there.

Senator MINCHIN—He has been for about four or five months.

Dr Kelso—On that basis, my blue sky wish for greater transparency would fall foul of the fact that the bids had been based upon pre-set notions of the regulatory framework.

Senator IAN MACDONALD—That is the point that you and others have enunciated very clearly and that is what makes up this whole process. Again, any regulation would have to come before parliament either as a disallowable instrument or through legislation. Of course, this committee's view, to a large degree I think, will guide the view of the parliament about what should happen, so perhaps it is not such a blue sky thought after all. Your submission is very good, but at the top of page 36 of our document, which I think is page eight of yours, you say:

> The architecture and design of a given FTTP network is the crucial determinant of its ability to accommodate multiple service providers in a non-discriminatory manner. The differentiating factor is the extent to which a network architecture and design has been engineered to maintain a 'one-to-one' and symmetrical relationship between service providers and customers.

As I understand it, you are saying that a one-to-one design of the architecture—you mention this elsewhere as well—really locks you in so that access, although it might be there in name, is not really practical. But you then say:

> The stronger this relationship, the more readily choice of service providers can be supported …

I cannot quite understand that bit and I wonder whether you could explain it for me.

Dr Kelso—I was referring to the fact that there are fibre-to-the-premises or fibre-to-the-home architectures that mimic the PSTN. At the moment the PSTN has the appearance of a copper pair from the telephone exchange to your home, and your service is on that. You can have a fibre-to-the-home network where there is an individual fibre to your home. That means that the services provided on that optical fibre can be unbundled to the lowest level so that the optical fibre to your home can be operated by a service provider or carrier in a totally different way from the way it is operated by the provider or carrier that owns that service. But, when you move to a fibre-to-the-node architecture—there are a whole variety of architectures and the common architecture that Telstra will probably operate will be a PON, a passive optical network—which is an architecture that shares infrastructure, it is technically that much more difficult to unbundle the access by competitor service providers so that they can provide a service that is different from that of Telstra. That is really the main point I was making in that very condensed statement in my submission. The secret to competitive access that offers innovation is to unbundle the capability of the technology to the lowest possible level, but it is very difficult to do that with optical fibre networks.

Senator IAN MACDONALD—Throughout your submission you have made the point that, even though they are required to provide open access, a company like Telstra, for example—we

do not want to bag Telstra unnecessarily, but using it as a hypothetical—will design their system so that, whilst legally there is a requirement for open access, technically open access is almost impossible. Is that what you are saying?

Dr Kelso—Yes. A good example of this is in the whole matter of resale. For example, if open access is interpreted in such a way that competitive service providers merely resell the service package of the network owner, be it Telstra or otherwise, it is a very poor form of competitive supply. I would say it is also a very poor form of open access, because they would simply be reselling the same service. However, if the access is such that it is unbundled to the lowest level, a competitor-supplier can say, 'Well, look, I'm going to offer a completely separate type of service from that of the network owner.' That is a better example of what you can get from open access than simply resale.

Senator IAN MACDONALD—Could you give a broad comment on how Telstra's profitability would be affected if the acceptance of a proposal were accompanied by a new and very tight open access regime so that you could genuinely have open access? Clearly, one would imagine their proposal to be on the basis that they do have a competitive advantage because it is their network and, if they are required to have access, they will grudgingly give it, as they have given it in the past—which, from the evidence we have heard, has not been terribly open. Are you in a position to be able to give a broad general statement on the profitability of Telstra if the regulation did require there to be genuine open access?

Dr Kelso—Broadly speaking, I think you would have to conclude that a true open access regime will adversely impact upon Telstra's profitability. In a way, you could even say—putting aside the argument that the $4.7 billion is to be or should be focused on rural and remote service provision—that the $4.7 billion could be compensation for lost monopoly profit. That is another way of looking at it. Yes, Telstra's profitability would be adversely affected, but that is inevitable because what we are talking about here is, I hope—which is in the interest of end users—the creation of a utility network; and the profitability of a utility network is, by definition, a business that will produce lower profit margins.

Senator IAN MACDONALD—As a legislator I should know this, but could you tell us briefly for the record: in an absolutely open access network, do you know how they determine what the non-builders have to pay to the builder to give that builder a return on the common carrier network? I would also like your comments about the common carrier.

Dr Kelso—I am not an economist. There are many economists around who will argue about that until they are black and blue in the face. This is an area where Telstra has had considerable disagreements with the regulator, the ACCC, as to what is a fair price. But I would argue that ultimately, if this government or any government sees that a national broadband network is in the national interest, the network does become a utility and, therefore, utility pricing should control access to such a network.

Senator IAN MACDONALD—Does it work with the ACCC saying, 'Right, it cost you one dollar and your return should be 17 per cent; therefore, if anyone else wants to use it, they have to pay you 17 per cent per annum for'—

Dr Kelso—It would be something along those lines. But, coming back to my point about a utility network, utilities tend to make a return of 10 or 12 per cent or something like that and not 20 or 25 per cent. Obviously, Telstra or any other carrier would like to make these sorts of higher returns, but ultimately it is not in the national interest, particularly if the government is going to supply $4.7 billion. But, even if the government were not going to supply $4.7 billion and were going to legislate for some form of national monopoly in the provision of a NBN, as was going to be the case under the previous government, it is inevitable that this will become a utility and utility rates of return must apply. Carriers will fight this, but I believe it is neither in the national interest nor particularly in the interests of end users for it to be considered anything other than a utility, particularly when you consider the natural monopoly aspects of optical fibre. The cost of carrying one bit on an optical fibre is the same as carrying one million bits, a trillion bits or a trillion-trillion bits; therefore, once the optic fibre is put in, there is the potential for massive amounts of bandwidth to be carried. I believe that has all the necessary characteristics ultimately to become a utility, so profit margins should be amended accordingly.

Senator NASH—There is something I would like to explore with you. In the event of somebody other than Telstra being the successful bidder, could you perhaps outline for the committee how the process and the structure would operate? Given that Telstra currently has the copper from the node to the home, if somebody other than Telstra were to be the successful bidder, how would you see that playing out if somebody other than Telstra needed access to that particular node-to-the-home infrastructure—if I have it right—or, indeed, what could they do to get it from the node to the home?

Dr Kelso—I am sorry if it sounds as though I am picking on Telstra but I cannot avoid doing so, because this is all about Telstra. Considering the track record of gaining competitive access to the only wireline access infrastructure to have been installed in this country since the paired copper network—that is the hybrid fibre coaxial pay TV network operated, for example, by Foxtel and Optus but mainly by Foxtel—and then to comment on your question, 'What would happen if other than Telstra were the winner?' I would imagine that a non-Telstra NBN provider would confront incredible difficulty. I suspect that there would be endless court cases going on for quite some time. The court cases involved in preventing access to the pay TV network went on for about 10 years—and Telstra can employ more lawyers than any government or any regulator can, and it will. After all, this is a strategic matter. Telstra has strategic power through its copper access network, particularly the pits and pipes in the street, and it is not going to give that up willingly.

Senator NASH—There is no sort of mechanism that a government could use really to alter that. Indeed, hypothetically, if Telstra were to go down that legal road, there would be nothing you could do to alter that progression of events, is there?

Dr Kelso—It is possible, but it would be difficult. You would have to be brave to take it on, but it is perfectly possible. It depends a lot on how the party that wins the NBN tender is authorised. They could be authorised with a change in licence conditions. For example, if a non-Telstra carrier had its licence conditions changed so that it was the only provider of a NBN and, therefore, Telstra was not, that would be a significant change and would change the dynamics. It could be claimed that Telstra's assets in the customer access network would be immediately devalued. But, on the other hand, they wrote off the copper pairs decades and decades ago, so we are really talking here about whether Telstra would see it being profitable to provide access to its

pits and pipes in the network as a utility provider rather than as a monopoly provider. It would be more a mind-set.

Telstra knows that it is inevitable that many of its services will move to those of utility provision; it is only a question of when it will happen. That is why it is putting so much effort into its Next G network, its wireless network, where it can charge maybe not monopoly prices but quite attractive prices and, therefore, get a good return on its money. But here I think we are talking mainly about a wireline access network rather than a wireless access network. The wireline side embodies many characteristics of a natural monopoly and it will inevitably become a utility.

I would hope that a non-Telstra winner of this tender would be given a licence to provide the service—and, therefore, a monopoly licence. Telstra, if it were not the winner, would not be licensed to provide these services and, therefore, it would quickly realise that the true value of the pits and pipes in the customer access network is realised by regarding it as a utility and gaining a utility rate of return.

Senator NASH—In terms of changes to the regulatory framework and, hypothetically, if we were to see the types of changes you would like to see in providing that open access network and anything else necessarily associated with it, do you have confidence that the current structure and resources of the ACCC could deliver the outcomes that the resultant legislation would require? I ask that in terms of some of the situations we have seen over the last few years with the ACCC. Do you think the ACCC has the resources and the ability to deliver the open access that you would like to see?

Dr Kelso—If you are talking about the human resources of the ACCC, I have complete confidence in their personal ability. The problem really is the legislation. Up until now, in my view, the legislative framework that the ACCC has had to deal with in part XIC of the Trade Practices Act has been dysfunctional. That is the cause of the problem; it is not the ACCC as such. I could go on and on about it, but that is beyond the purview of this inquiry.

Senator NASH—From other evidence we have taken as well, the view certainly seems to be that the capacity is not there for the ACCC to do a better job, because the legislation simply does not allow it to do so.

Dr Kelso—Yes. As I have said in my submission, although I am not quite sure on which page, on repeated occasions governments have intervened effectively to pervert the intended nature of the trade practices telecommunications access regime. When they have seen a network provider wanting to install infrastructure, governments have tended to change legislation to favour the provision of the infrastructure at the expense of competitive access. There have been repeated occasions of that over the last 10 years or so.

Senator NASH—Do you have a view about the issue of stranded assets in the exchanges, once the fibre goes through, as to whether there should be compensation for the providers that are going to hold those assets?

Dr Kelso—I think the best response I can give to that is that, if we have a true open access regime through fibre-to-the-node or preferably fibre-to-the-home, the matter of stranded assets

should not be an issue. They probably have been written off already in tax terms. But, if you have true open access, there really are no stranded assets, because those competitors can then simply move into the new regime.

Senator NASH—Hop on and use them, yes.

Dr Kelso—If the new regime is not a truly open one, yes, there are stranded assets. But, really, having true open access is the answer to that.

Senator MINCHIN—But haven't they got all their gear in the exchanges—these LANs and things—which is then useless?

Dr Kelso—Yes. As I said, it has probably been written off in tax terms; it is useless.

Senator MINCHIN—That is not what they say.

Dr Kelso—Putting aside whether it has been written off in tax terms, yes, they do have a lot of gear. Typically, this gear has an economic life of only 18 months or so; they may or may not agree with that. As I said, in tax terms, it is typically written off. Yes, that gear would be thrown out. But, if they had true open access to an optical fibre network, they would not need that gear at all. So it really is a matter of whether you have true open access or not and that gear is thrown on the rubbish tip.

Senator MINCHIN—Technically, how is that open access for service providers achieved in the scenario that is being played out by the government? As I understand it, if it is fibre-to-the-node, you then have to have thousands of huge cabinets stuck around the countryside. The extent to which you have alternative service provision dictates the number of these things that have been described to us as being the size of 'big fridges'. Is that how open access to an optical fibre network works in practice?

Dr Kelso—For a fibre-to-the-node arrangement, yes, indeed, you do have what I would call a 'fridge-sized box'. Many of these nodes have been constructed and are out there already. It is really a question of the gear at the other end of the optical fibre down at the telephone exchange, and that fibre then can go back to the premises of the competitive service providers. It is questionable whether or not the competitive service providers actually do need the gear in the individual nodes. If you had five competitive service providers and had to have five sets of gear within the nodes, these fridge-sized cabinets would become very, very large fridges, and that is probably not feasible. In a way, depending on the sort of technology that is used, fibre-to-the-node technology is inherently anticompetitive and we should really be looking more towards fibre-to-the-home.

Senator MINCHIN—But presumably that is much more expensive, is it not?

Dr Kelso—Then this raises the matter of the timetable for the rollout of a NBN; its urgency; whether it is to be staged over a five-, 10- or 15-year period; whether the optical fibre is to replace areas where the copper pair network is faulty; whether it is to be rolled out in new housing estates; and whether it is to be rolled out in areas of inadequate service in rural and remote areas. It is a matter of programming and planning.

There is a common misconception that there is no optical fibre out in the customer access network. That is wrong; there is an absolutely huge amount. It has been rolled out since about 1993. I suspect that most of the optical fibre is already there. Because it has needed to replace faulty copper networks, Telstra has been putting it out to various devices that were called RIMs, remote integrated multiplexes, which have now been renamed. There are a whole variety of cabinets already out there in the customer access network. The traditional philosophy of telephone exchanges and copper pairs radiating out to the customer's premises is now getting quite old. Many of these telephone exchanges are empty because the optical fibre goes in one side and out the other to some pillars. So there is a lot of optical fibre already out there. In addition, fibre-to-the-home networks already exist in a number of new housing estates. So it is not a matter of will fibre-to-the-node come or not; to a large extent, a lot of the infrastructure is there already.

Senator MINCHIN—I will just sum up, if I may. You have been quite critical of this process as well as, to be fair, of the previous government's approach. But, in your view, what should the government be doing in terms of facilitating the enhancement of broadband services to the end user? What process should they have gone through? Do you mean that it just should have been left to the market?

Dr Kelso—Maybe I do not have a definite view on that at this stage. But if the government—in fact, the previous government too—had not seen fit to have it as a national policy objective in the way in which it is being framed currently then, if left to the market, we would have moved towards this naturally. In other words, it is fair to say there really is not the sense of urgency that has currently been set. Unfortunately, politicians will see fit to come up with an election promise every four, five or so years. If left to the market, we would have moved in this direction one way or another. But, that said, the rural and remote areas still require attention. The report from the inquiry that Dr Bill Glasson chaired is quite critical in that regard. Areas that the market will not serve still have to be addressed.

However, to come back to the first part of your question, in the same way in which the government of the day—they were mainly Labor governments at the time—when moving from the Postmaster General's department to Telecom and from Telecom as a monopoly to a duopoly with Optus, put a significant number of position papers in the public domain, I would have hoped that right now the government of the day, of whichever political persuasion, would have addressed this matter by preparing position papers and policy options and by allowing the end users and particularly the industry players to see where they would fit within the spectrum of policy options. That would have been a better outcome than to dictate, 'We must have a NBN now,' because that is a 'do or die'.

As noted in my submission, we are seeing now a telecommunications watershed. The results of the NBN will be with us for decades and decades to come, which has not been realised by many of the players. A generational change will occur as a result of the NBN and it cannot be undone; you cannot unscramble the egg. So let us hope we get it right this time because, in all honesty, regardless of the political persuasion of previous governments, we have not always got things right.

CHAIR—Dr Kelso, on that note, I thank you and acknowledge the comments made by several of my colleagues about the experience and expertise that have gone into your submission

and its lucidity, if I may put it that way, particularly in pulling together many threads that we have heard from others.

Dr Kelso—Thank you.

[11.36 am]

CLAPPERTON, Mr Dale, Spokesperson, Electronic Frontiers Australia Inc.

SUZOR, Mr Nicolas, Vice Chair, Electronic Frontiers Australia Inc.

CHAIR—Welcome. I will outline a few of the nuts and bolts of the committee process, given that you have not been in the room to listen to them being given previously. The evidence that you are about to give to this Senate Select Committee into the National Broadband Network is public. If at any stage you wish to give evidence in private, you may request to do so and the committee will consider such a request. It is an offence and, indeed, potentially a contempt of the Senate for any party to attempt to influence you or to inappropriately influence the evidence that you may give to the committee. It is also potentially a contempt of the Senate for you to give false or misleading evidence to the committee. If at any stage you wish to object to answering any of the questions put to you by me or any of my colleagues, please say so and be prepared to state the grounds upon which make such an objection; the committee will then consider such an objection. At this stage do you wish to amend or vary the written submission that you have made to the committee?

Mr Clapperton—Not as such. However, I would like to place on the record that my position within the organisation has changed since the date of the submission. I am no longer the chair of the organisation; I merely hold the position of spokesman.

CHAIR—Thank you for that clarification. Would you care to make an opening statement?

Mr Clapperton—I will make a brief statement. Of course, we thank the committee for the invitation to appear before you today. We appreciate the obvious level of concern that you are displaying in this process to ensure that the end result will be of benefit to Australia. As the previous speaker ably noted, the result of this process largely will be an irreversible change in the network of landline telecommunications in Australia and it will be with us for decades. It is extremely important that we get it right because the results could haunt us for a very long time. My colleague may wish to add to what I have said.

Mr Suzor—I do not have anything to add. From the brief period that we were able to observe the previous speaker, we believe that many of the issues that we would have raised in our opening statement have been canvassed quite extensively already before this Senate committee. We are happy to answer any questions on our written submission.

CHAIR—Thank you. Many of the issues may well have been canvassed, but I am sure that some of them were put in quite a different fashion from the way your organisation has put them. Starting with some of the statements you make in your conclusion, you comment that, in your view, the benefits of a fibre-to-the-node network do not outweigh the costs and that such a network should not proceed for that reason. That statement is reasonably controversial and you may wish to expand further on it. My question around that is: would you continue with that claim, if the network were on a fibre-to-the-home or fibre-to-the-premises basis?

Mr Clapperton—I think a fibre-to-the-premises network, to the extent it was deployed in parallel with the existing copper network, would alleviate many of the concerns we have about a fibre-to-the-node network. That said, fibre-to-the-home obviously is not how this process has come, as fibre-to-the-node has really been picked as the technology by the government, and the industry has been told to go forth and put together proposals around that particular technological model. As you would see from our submission, we take issue with the picking of the technology by the government. Increasing the speed and availability of broadband is a laudable policy goal, but we do not necessarily feel that saying, 'This is how we want you, the industry, to deliver it. Come to us with proposals', is the best way of addressing that.

CHAIR—You talk about copper in your answer to that. You have referred in your submission to the High Court judgement:

Telstra's bundle of rights in respect of [the copper network] has always been subject to the rights of its competitors to require access to and use of the assets.

You then go on to say that a fibre-to-the-node network:

…would be one in which Telstra's 'bundle of rights' is greater than the existing copper network …

Can you explain the basis upon which you are saying that?

Mr Clapperton—Certainly. The decision of the High Court, which we have quoted in our submission, is one where Telstra essentially tried to defeat the current regulatory environment that forces them to provide access to the copper network to their competitors by arguing that the Australian Competition and Consumer Commission was requiring them to give that access at a price that they argued was lower than their cost of providing the service and was therefore an expropriation of their property on other than just terms. The thrust of the High Court's judgement was that at the time that Telstra acquired the copper network, which of course had previously been a monopoly government owned asset, it was acquired subject to conditions and subject to the understanding that they would be required to give access to their competitors. Essentially from the moment that this network came into Telstra's possession it was on the basis that they would be required to give access to services provided using it under the relevant provisions of the Trade Practices Act.

A fibre-to-the-node network would essentially be a fresh start. It would be a clean slate. There would be no such pre-existing terms and conditions or at least only such terms and conditions as the government chose to impose on Telstra. If the government chose not to impose on Telstra or whoever creates the national broadband network an obligation to provide access to their competitors on reasonable terms, then in the future the operator of the network would presumably have the right to refuse access to provide access to their competitors on reasonable terms. To the extent that any future changes were made to those arrangements the operator of the network might feel that was, in effect, an acquisition of their property rights such as Telstra alleged in that case.

CHAIR—Is it around that that you are then going on to say such access to the copper network would be economically unviable without imposed conditions? Are you saying that if, firstly,

Telstra were to get the gig, and secondly without imposed conditions a competitor would find it economically unviable to access copper network in that environment?

Mr Clapperton—I feel the point that you have just made is valid, but the point that we were trying to get across there is that to the extent that under the new arrangements Telstra were required to give access to their competitors to the scraps that remained of the existing copper network—that is, the copper running between the houses or the business premises and the nodes—it would be economically unviable for Telstra's competitors to duplicate the fibre-to-the-node infrastructure by essentially putting an Optus mode beside each Telstra node, for example.

CHAIR—I have one further question before I invite Senator Minchin to ask you some questions. You stated earlier on in your submission that as a matter of commercial and legal practicality nobody other than Telstra would be able to build the fibre-to-the-node network. You then go on to say your submission is based on that. I note how you get to the commercial and legal from the foregoing/preceding bits in your submission, but what about practicality? Are you saying that as a matter of practicality nobody but Telstra, or are you basing it purely on the legal and commercial considerations?

Mr Clapperton—There is a practical element to it. Telstra, of course, owning the network, has the best information about it. Even assuming that control of the network could be wrested from them and given to somebody else, that other person would presumably suffer under some degree of disadvantage from that position. The practical considerations derive from the legal considerations. If somebody other than Telstra got the gig, as you put it, then Telstra would tie the whole process up in court until the heat death of the universe. I think they have fairly clearly evinced an intention to do so.

CHAIR—Senator Minchin.

Senator MINCHIN—Could you tell us who you guys are? What is your raison d'être? Who are your members? Who do you represent and what is your purpose?

Mr Suzor—We have been representing internet users for the last decade and a half, since being founded in 1994. We are a completely volunteer run organisation and we are funded by individual donations and not by industry participants.

Senator MINCHIN—Do you represent small business and commercial users?

Mr Suzor—Particularly individual users. We have consistently been interested in the online civil liberties and the interests of internet users in Australia.

Senator MINCHIN—Can you tell us how many members you have?

Mr Clapperton—I do not know off the top of my head. Certainly it is a reasonable number of members, although we are somewhat similar to a political party in that our number of card-carrying members may be small.

Senator STERLE—We can tell you how many members we have. Can you tell us?

Mr Clapperton—I believe it is in the high hundreds. I have never had responsibility for managing the membership. I do not know anything more accurate than that. We have certainly had an influx of new membership lately as a result of certain other government policy initiatives in relation to the internet that are not under consideration today.

Senator MINCHIN—Are your members around Australia?

Mr Clapperton—Yes. They are throughout the country, as for that matter are our board members.

Senator MINCHIN—I was interested because your address is in Adelaide.

Mr Clapperton—The organisation was originally incorporated in Adelaide and we are required to maintain a postal address there for legal reasons.

Senator MINCHIN—Is your main thrust the freedom of access to and information from the internet?

Mr Clapperton—Primarily.

Senator MINCHIN—For example, the clean feed issue is probably be No. 1 on your agenda at the moment?

Mr Clapperton—As a result of the level of attention that has been demanding from us we unfortunately have not been able to stay quite as abreast of recent NBN developments as we would have liked to, but notwithstanding that civil liberties is our primary focus we have from time to time been involved in what you might consider non-core areas such as this because the issues of what people can really do with the internet are predicated on having access to the internet and moreover access to the internet at, for example, reasonable cost.

Senator MINCHIN—Is that really what is driving your concerns? Is it your view that inevitably the construction of this NBN is going to mean higher prices for everybody? Is that the bottom line for you?

Mr Suzor—That is one of our serious concerns, that this will raise the prices. The case has not been made that access for users and asymmetric upload speeds will significantly improve. Raising costs in tightening economic situations is very much our concern, as is individual access to the internet and to information.

Mr Clapperton—For that matter, the level of the price increases to end users that seem likely do not appear proportionate to the increase in speed that would be available.

Senator MINCHIN—The most interesting statement you make is that the status quo offers internet connectivity at reasonable speeds at reasonable costs to a reasonable proportion of the country. We are constantly hearing the hype that Australia is a disaster and we are being left behind by the rest of the world with slow speed and all the rest of it. What you are putting to us in representing internet users is that that is simply not the case?

Mr Clapperton—Certainly the speeds could be faster. As compared against many other countries our speeds are below average. However, Australia has certain unique characteristics both in terms of geography and the current regulatory environment surrounding telecommunications and particularly decisions that were made during the divestiture of the telecommunications network from the then PMG Department. We labour under certain consequences of geography and decisions made during those periods, which unfortunately mean that in Australia the cost of doing business for ISPs, for example, is significantly higher than in many other countries and this translates to slower services.

Senator MINCHIN—My reading of what you are saying is that you feel the government should terminate this whole process here and now; is that correct? Is that really what you are saying?

Mr Clapperton—In our view, in the direction the project is currently heading the result will not be a good one. We are not taking a position on whether it is possible to take a pause at this point and say maybe we should consider fibre-to-the-home as well. We are not taking a position on whether that is possible as a matter of political or practical reality. But in our view the process seems to be currently headed in a direction that will produce an adverse outcome.

Senator MINCHIN—Have you formulated an alternative course that the nation should pursue to achieve higher speeds?

Mr Clapperton—Looking at fibre-to-the-home would be one way of doing that, but there are other considerations such as the cost of backhaul within the country and the transmission costs between Australia and other countries that are still going to have a tremendous impact on the cost and availability of broadband services. For example, there is no point having a very fast internet service to your home if your download quota is only 500 meg per month, which you could use up in five minutes. That point has been ably made in a number of different ways by some online commentators, but that is currently the situation that exists with respect to some Telstra services currently available in this country. Yes, for $50 a month you can have a very fast ADSL2 service and, assuming you can get its notional maximum speed as a practical matter, you can only use it at full speed for five minutes in the month and then you will be paying a hefty sum for every megabyte you download after that.

Senator STERLE—You said that the rollout of the national broadband network is not a good one in your words. Not a good one for whom?

Mr Clapperton—Certainly not for the end users whose interests EFA represents. Neither would we submit it is a particularly good outcome for the internet service provider industry. They are currently labouring under a regulatory regime surrounding access to the local loop infrastructure, which was denounced by the previous speaker as fundamentally flawed and ineffective. Nonetheless, the other ISPs in this country who are engaging in infrastructure based competition with Telstra are struggling to do so. They are providing a good competitive constraint on Telstra's pricing, product offerings and behaviour in the market to the extent that they are able to do so, but the introduction of the NBN would change all of the ground rules that they are operating under and would largely seem to exclude them from infrastructure based competition, so they would end up being resellers in some way, shape or form of a Telstra offering.

Senator STERLE—I will make it as simplistic as possible, because the whole purpose of the policy of the rolling out of the national broadband network is to reach 98 per cent of Australians. Are you saying your couple of hundred members plus upwards you represent would be disadvantaged if 98 per cent of Australia received high-speed broadband?

Mr Clapperton—We are saying that least some of that 98 per cent of Australians would be disadvantaged, not only our members. In the market people can already get internet services of approximately the same speed as would be available under the NBN and can get it so much cheaper. Certainly that proportion of the market would be worse off under the NBN because they would be in a position of either paying more for what they currently have or having less than they currently have because they cannot afford to pay more. I do not have any firm statistics on the number of people who currently have access to what you might call NBN-grade services, but it is certainly a non-trivial number. Those people would be disadvantaged.

For the people who cannot currently get what you might call an NBN grade service the question is going to be: they might be able to get it under the new environment but can they afford it? There is really only so much that your average household might be willing to pay for internet access. I am currently paying $50 a month. Under the NBN environment the most recent pricing that I have seen, a suggestion by Telstra, is that their wholesale price for a service of comparative speed to a reseller would be more than I am paying retail at the moment, so my cost would certainly go up. I think a lot of people would be in the situation of saying, 'Yes, fine. We can get a 12 megabit service under the NBN, but we just can't afford it. Even if we could afford it, we could only use it for an hour or so a month at full speed and then we will have to put our hand in our pocket again to pay for it.' There is unfortunately something of a fallacious public perception at the moment that the cost of a fast notionally unlimited internet connection is $50 or $60 a month, when that is quite simply not the case. That is only sustainable at a retail level because ISPs are really oversubscribing their services. That is why you see things such as download limits. The true cost of even a one megabit internet service that you can use at one megabit all month is not less than $100. It is probably over $1,000.

Mr Suzor—The reason we are critically concerned about download quotas and upstream capabilities is that the use of the internet is changing in Australia. It is not just about having a high-speed network to browse the occasional webpage. We are looking at connections that are always on. We are looking at cloud computing, where people are increasingly moving their applications away from their desktop and onto the internet via various servers around the world. All of this takes upstream processing. We are looking at people who are participating in various multimedia and content rich services, so people who are uploading and downloading videos and participating in a real global conversation. As these sorts of activities increase we have to be very careful about the very high costs that we currently pay in Australia for upload content and download quotas—cents per megabytes above a certain quota and upstream speeds—in order to participate in participatory communication. This is something we are very concerned about at the moment.

CHAIR—Do you think people know what they have got in terms of speed? In saying that we have to do better, do people know what they have today? Do they just think they want better? In asking that question of you, your membership are essentially wonderful IT nerds, I suppose, and I bet they know precisely what they have, what they are not getting and what they could get, but what about the general populace?

Mr Suzor—I would say in response that our members are acutely aware of the differences in broadband speeds and costs in Australia as opposed to the US. I would suggest that it is just a matter of time before the wider community in Australia feel that as acutely as some of our members do. It is a fact that people are using more multimedia content. People are starting to use the internet more for video calls and for playing around for multimedia, and it is starting to put a larger strain on their fairly limited budgets.

CHAIR—I am trying to drill down into your assertion that it is not just about the speed, and indeed the focus on the speed may be misplaced in many ways. As part of that, do people really know whether they need faster speeds?

Mr Clapperton—It is difficult to know. Certainly for some applications the level of speed at which you are doing something is immediately apparent. If you are watching something like a video on YouTube, as long as it is downloading to your computer faster than you are watching it, it does not really matter how fast it downloads. In terms of sending and receiving emails, the level of speed is almost not a factor. There are some applications that are very sensitive to speed. Those types of applications also tend to be the ones that shift a lot of data around. Speed is something that is thrown around a lot because it is a metric that is easily computed and easily compared against overseas countries. It might be the case that in an overseas country where the average speed might be lower than what would be available under the national broadband network but those people can actually use their connection 10 times as much on the whole they might be better off.

CHAIR—Senator Macdonald.

Senator IAN MACDONALD—Thank you for your very lucid submissions on some very interesting points. You have covered nearly everything I wanted to ask. Would you think that the $4.7 billion taxpayer subsidy could just be used as a separate program to try to connect those who are not currently able to get 12 megabits to the system?

Mr Suzor—That is a suggestion worth investigating. Rural users and users currently outside the zone of ADSL2 services could certainly benefit from that level of investment.

Mr Clapperton—For that matter, on a political level, some of the changes to the existing regulatory regime that had been mooted might also be effective in ensuring that more people can get access to those types of services by promoting the level of infrastructure based competition in what you might call fringe regional areas. Certainly $4.7 billion could do a lot to help internet access in rural and remote areas that genuinely do need it. Perhaps it could be targeted at them rather than a one-size-fits-all approach. Pulling the pin on the OPEL project was perhaps a mistake in that respect.

Senator IAN MACDONALD—I am sure you said this while I was out of the room, but what do you do for a living in your normal day job?

Mr Suzor—I am employed by the Queensland University of Technology. I am a PhD researcher in the Faculty of Law.

Mr Clapperton—I have just completed a law degree. I worked for 10 years in the IT industry, including for internet service providers and in telecommunications. I am also a researcher at QUT, although in reasonably short order I am going to be moving back into the industry in a legal capacity.

Senator IAN MACDONALD—It is strange how lawyers end up in IT stuff.

Mr Clapperton—I ended up in law as a result of my work with EFA and not the other way around. As part of my work with EFA I found myself having to deal with so much of this stuff that it was a case of I really ought to be able to charge for talking about this.

Senator IAN MACDONALD—When I left the law 20 years ago you could only get a case report a year later by opening up a book you paid a fortune for. While talking to you now I have just been reading a decision that came down in the Supreme Court last week—for free. It is just amazing now.

Mr Suzor—It is fantastic. The level of access has really changed the way that everyone does business and interacts with their friends and family. This is what is really exciting to us about the internet and about these new communications technologies. It is important for us to really get things right, because they are fundamentally important.

Senator IAN MACDONALD—Thank you for that.

CHAIR—Thank you very much, gentlemen.

Proceedings suspended from 12.06 pm to 12.19 pm

JACKSON, Mr David Gavin, Manager, Economic Development, Brisbane City Council

CHAIR—Welcome, Mr Jackson. The Senate select committee inquiring into the national broadband network is going to enjoy hearing from you, so thank you in anticipation of what you are about to say to us. The evidence that you give to the committee will be public. If at any stage you wish to give evidence in private you need to make a request to do so and the committee will consider it. The evidence that you give is protected by parliamentary privilege. It is unlawful, and indeed potentially in contempt of the Senate, for any party to attempt to influence the evidence you might give or otherwise inappropriately interfere with that process. It is also potentially unlawful and in contempt of the Senate for a witness to give false or misleading evidence to the committee. If you wish to object to answering any of the questions asked of you by myself or any of my colleagues you should state your wish to do so and the committee will then consider the grounds upon which you might wish to make that request. You have not provided the committee with a written submission, but you might wish to make an opening statement or a verbal submission to the committee now, whereafter we will ask you some questions.

Mr Jackson—I do have a prepared statement to read. I can make written copies of that available if you wish.

CHAIR—Thank you. That would assist.

Mr Jackson—I will be reading a prepared statement based on the views formed within Brisbane City Council over time. The application of digital technology to telecommunications opens the possibility that a citywide or nationwide telecommunications network can function more like a computer network than a traditional telephone network. Accordingly, there is a possibility for a vast range of life enhancing and productivity enhancing tools and services to be provided far beyond the realms of traditional telephony. A national broadband network, therefore, is potentially transformative in its effects. It is of paramount importance to Brisbane and major cities elsewhere in the country that next generation broadband infrastructure is comprehensively available, configured and operated in a way that best serves the needs of current and future telecommunications users in the cities, that it is supported by a regulatory framework that promotes a competitive environment resulting in more choice of services and lower costs for users, and supports our continued global integration and economic growth.

We do have some concerns. Firstly, the proposed broadband network must provide a minimum of 100 megabits per second speeds to premises in the major cities in order to support the applications that are now available and will be universal in future. I have a diagram, which I did circulate to members. Hopefully you have that in front of you. I will refer to that briefly. Diagram 1 shows the sorts of speeds required by various applications that are now becoming widespread and will become universal progressively. The scale on the left-hand side is the speed of telecommunications that is required. Most of the modern applications require speeds that are going up towards straddling that 100 megabits per second mark. There is a logarithmic scale on the left-hand side, which is not directly proportional. The national broadband network stated speeds are in the order of a bit over 10, as shown on this diagram here, and that shows you the sorts of applications that we have coming online, that are here currently and will become

universal in the future need far greater speeds than that; they require speeds around 100 megabits per second and above that as well going into the future. That is our first concern.

The national broadband rollout must address serious concerns about network ownership and discrimination against services provided by companies other than the network owner. The current regime has failed to deliver globally competitive speeds and prices, and I flag diagrams 2 and 3, which are based on OEC data. Diagram 2 is a speed/price comparison and the price per advertised megabit per second. In Australia we can see monthly prices, in terms of US dollars, in terms of megabytes per second, are in the order of $22 per megabit per second on a monthly price basis. It is neatly positioned between the Slovak Republic and Iceland and is well down the list of advanced countries.

Diagram 3 also shows an interesting comparison between those countries that operate a capped system. The diagram shows how the price per additional megabit per second over and above the cap operates. Australia is shown as having capped limits, typically in the order of 10 to 15 gigabytes, and when you want to get additional speed you are paying a price per additional megabit of well in excess of 10c. It is very much higher per additional megabit than in other countries. We have a low cap and a higher price per additional megabit. Our pricing is clearly different and more excessive than some of the other countries shown on that diagram.

We believe that a regime is required that ensures that industry structure and behaviour of all parties harnesses the full potential benefit of broadband and facilitates the maximum associated improvement to economic wellbeing. The regulatory regime up to this point has not adequately provided the framework for the criteria that I have outlined above, that is, comprehensive availability and so on.

Restriction of open competition on services due to pricing policies of the network owners, favouring its own affiliated service providers, has resulted in both higher cost and limited service to end users. Most importantly, one of the core principles that needs to be maintained in the future in terms of the national broadband network must be complete separation of the ownership and operation of the network itself from the services deployed over it. That is an important business model characteristic that we believe is quite essential.

There are some other important business model characteristics that, if adhered to, will ensure optimum benefits. There is not only the opportunity to build a very high-speed future proof fibre-optic network but also the opportunity to create a superior delivery model that multiplies benefits to the community, the customers, the network stakeholders and the content and service providers.

In addition to separation of the ownership of the network from retailers and service providers we advocate seven principles of highly efficient broadband networks that need to be maintained under a national broadband scheme. Services provided over digital internet protocol based networks require a very different business model to those provided over the traditional vertically integrated analogue telephony model that we have historically. Adherence to the seven principles that we advocate is required in order for the full realisation of the potential benefits of this transformative technology.

The first two principles relate to requiring an open network, that is, open technically using internet protocol, IP systems and Ethernet, and open commercially by allowing multiple service providers to access the end user market on an equal basis. The first principle is to use open interface standards, that is, internet protocol and Ethernet. The second principle is to provide access to all customers on an equitable non-discriminatory basis. The remaining principles I will outline are a natural consequence of modern IP networks.

The third principle therefore is that signing up with one service provider must not preclude a customer having other providers for the same service. There are models in the world that have failed on that particular score. The one that we flag is the model in Stockab in Sweden that does not adhere to that particular principle. It seriously devalues the technological potential of broadband networks and does prevent equal access.

The fourth principle is that the network must be symmetric in both directions. This is a natural for high-speed optical fibre. The fifth principle is that any customer must be allowed to be a source of content or services. So you can receive information but you should, being connected to the system, be equally permitted and made capable of providing just as much information back into the network. That is technologically completely feasible.

The sixth principle is that the network must have multiple meshed nodes with the same connections to all customers, providing customers should be able to feed into the network like anybody else but not through any particular network provided head end. Any connection into the network must be capable of uploading to the network as much content as that customer would like to upload as well as being able to download. Therefore the need to provide through a head end should not be there. The network needs to be configured so that it does not require a head end.

The seventh principle is that customers must be able to connect to any other customer without necessarily needing the brokerage of a provider or even without having any provider; for example, small businesses connecting branch officers themselves using the network as their virtual private network, and another example is x-ray clinics sending images directly to specialists or individuals sending wedding photos or video directly to their relatives. Internet protocol networks do this quite naturally.

The full benefits of a highly efficient network using internet protocol can only be realised when all seven principles are observed. Those accustomed to the notion of a provider piping content and services one way to end users may have trouble appreciating some of these principles and their potential. However, the advantages and benefits of the egalitarian IP networks must be upheld. Failure to apply the lack of principles, that is the last several, nullifies the first two. Principles one and two specify an open IP network capable of shifting packets efficiently. As far as the network is concerned there are no end users, there are no content providers and there are no service providers. They are all just ports as far as the internet is concerned, or as far as the network is concerned. All ports are customers and some may produce more than they consume but the network does not care, or should not care. Furthermore, on an internet protocol network, the ability of one port to send to any other port does not depend on the third port, hence the customer's use of the network should not depend on the service provider. Internet protocol guarantees equality of access plus many other technical and operational benefits, but the equality must be universal. At any time any customer might also be a provider.

Further impetus for these principles comes from modern computers. Even a modest domestic PC has all the functions such as 100 megabits per second or one gigabit per second ports necessary to establish and operate networks and provide services. Principle five already exists technologically and is just waiting to be applied in the real world. There is more intelligence in customer equipment than there is in the networks themselves. Any user can obtain, mostly for free, easy-to-use packages to enable voice-over-internet-protocol telephony, local area networks and wide area networks, virtual private networks, web hosting, mail self hosting, streaming video transmission, game hosting, et cetera. There is already a marriage between technology and these principles, even if the current business models preclude them. Violating these principles requires deliberate non-standard modifications and would ruin the most efficient model.

CHAIR—We have your written submission, which is very useful. I think we would make better use of the time if it is all right with you if the committee proceeds to questions.

Senator IAN MACDONALD—Thank you for your paper which we have been skim reading as you have been reading it to us. We can study it a bit more closely in our own time after the hearing finishes. You are part of the Capital City Lord Mayor's grouping, aren't you, from which we had a submission in Perth and you were mentioned in despatches there as the expert, I think. I am just curious as to how the current system serves the Brisbane City Council, which as we all know is one of the bigger government instrumentalities throughout the whole of Australia, beaten only by the Commonwealth government and a couple of state governments. How does the current system suit your needs as a very large establishment, or how could it be improved?

Mr Jackson—Some of the basic technical aspects are this: on the desktop in Brisbane City Council we access the internet at the rate of about one megabit per second. That is not constrained by our link to the internet. We buy a service that enables us to have 100 megabits per second but the internet functions in such a way that the rest of the Australia-wide network and the functioning of the internet generally basically effectively means that at the desktop we get one megabit per second. Therefore we are not operating at the sorts of speeds which would permit the services that are outlined in this submission.

Senator IAN MACDONALD—I am non-technical, as you would appreciate, but are you saying that you have got a set-up that could do a lot more but it is the rest of the system that constrains the speed at which you—

Mr Jackson—Yes, as I understand it, bearing in mind I am not an engineer, I am an economist. This is information that I have asked about and am purveying to you.

Senator IAN MACDONALD—Looking at diagram one you would use videoconferencing and I suspect not distance education but perhaps some of the remote councils might like to be educated by some of the efficiencies of the Brisbane City Council. But you would use videoconferencing?

Mr Jackson—We do use videoconferencing. The Brisbane City Council has some of its own optical fibre and it is that which we tend to use.

Senator IAN MACDONALD—Where does that connect to?

Mr Jackson—We do have a link, for example, between the Brisbane City Council's city office and our St Paul's Terrace office in Fortitude Valley which we use. We do not connect all of our premises fibre to fibre. It is only premises that we have linked up with our optical fibre that we generally do videoconferencing between.

Senator IAN MACDONALD—If the mayor wanted to speak to the other mayors as part of the Council of Capital City Lord Mayors and did not want to fly around the globe, would he use videoconferencing—

Mr Jackson—I am not aware that that has occurred.

Senator IAN MACDONALD—Are you saying because you have got the one megabit download and you need between 10 and 100, as I read this, for proper videoconferencing that it would be difficult to do that on your computers outside your own fibre optic system?

Mr Jackson—I would guess that is true. I am just guessing that that is true. It is not something we deploy.

Senator IAN MACDONALD—The NBN proposal was that we should have a minimum of 12 megabits per second. If that were the case would you get 12 megabits per second at the Brisbane City Council?

Mr Jackson—If it is the case, as I believe it to be true, that it is the national network that is constraining our speeds that we receive at the desktop. In terms of our access to the internet to the extent that the fixing up of the Australian network would improve that, then yes we would, because it is not our own internal technology that is governing our speed.

Senator IAN MACDONALD—As an economist have you ever had occasion to quantify what the lack of a fast network means in dollar terms to your council?

Mr Jackson—I have not done that equation, no.

Senator IAN MACDONALD—I refer to the speed-price comparison—and I liked your comment that Australia was stuck there between the Slovak Republic and Iceland. I do know that Canada is a bit further down, which begs the question perhaps it is countries with big areas and big spaces like Australia, Canada, Greece, Mexico and Turkey that might add to the cost. Does that sound right?

Mr Jackson—I am also looking at the next diagram, diagram three, which shows that they have a certain cap in Canada which is 65 gig, so presumably I would say they are probably paying a fair bit for connection but once they are on there and they see the cap the incremental cost is very low. I am thinking it is possibly to do with the averaging of the price of that. It is probably more to do with the pricing structure as opposed to—

Senator IAN MACDONALD—In the data capped price comparison, Australia is by far the worst in the world.

Mr Jackson—In terms of the way that additional megabits per second are required, yes. What this shows also is that there are not too many countries in the world that actually do have a cap. Most of them you simply pay and you pay for what you get, but there is no cap. There are not too many countries that have a cap.

Senator NASH—One of the things you have raised which has been raised by some other witnesses as well is what you are determining here: competition implications. Can you take the committee through your concerns about what the competitive environment might be once we get through the tender and we have a winning bidder and the new NBN is rolled out? What are your concerns around competition under that new framework?

Mr Jackson—The important thing I think is that we really must encourage a lot of innovation and competition between service providers and retailers over the network. We need new services. We need the price of service to be driven down for the consumer. We would certainly want a system that maximised that. There would be a conflict of interest. If a network owner was also to own a service provider the obvious concern would be the discrimination of that network owner in terms of the terms of access to the retail provider. That is the potential conflict of interest that is there.

Senator NASH—How do you see that being overcome?

Mr Jackson—The model that we are advocating is complete separation of the ownership and operation from service and retail providers as being the only way to do that.

Senator MINCHIN—Many have come before us, indeed even today, and said that in reality only Telstra could build what the government envisages. A, is that your view; B, is the necessary corollary of that that the government must in awarding it to Telstra legislate to break the company in half?

Mr Jackson—The technology that we are talking about is not cutting edge technology particularly. It is well known. I think the problems of rolling it out are going to be raising the finance to do so and then of course getting the workforce and the competent people to design and build it. In my undergraduate days we were told: it is a bankable proposition and it will be funded if there is no capital rationing. You would imagine that if a business case was put together and it had the required rate of return it should be able to find finance. It is quite possible that it might be a long-term return in which case there would be some need for a government contribution to carry it through. I do not necessarily agree that Telstra would have to be the only entity that could do this. Yes, you might need to actually construct an organisation to do it but that could be done. Have I answered the question or is there a part of the question I did not answer?

Senator MINCHIN—Those who argue that only Telstra can do it are not necessarily just talking about the money but the fact that we are not talking about a new network, we are talking about upgrading an existing network, in a sense overlaying optic fibre over the existing copper and then building nodes that link into Telstra's last mile and that in reality only Telstra would be in a position technically and legally—

Mr Jackson—To do so.

Senator MINCHIN—To try to envisage somebody else coming in over the top—

Mr Jackson—Coming in and doing it, yes.

Senator MINCHIN—and doing that. Those are the arguments. I am not saying whether I agree or disagree. But have you thought that through?

Mr Jackson—There are some comments I could make that may be relevant. Firstly, it is the last mile that is the really expensive part. It is not so much the backbone and the trunk network. That is not so much the point. It is the last mile. Getting into premises is the key to it. That is where most of the expense actually is. It is where most of the expense is but it is also where much of the problem is. You really do need optic fibre into every premises to provide the functionality that will be expected over time. That is not a problem in new building, redevelopments or greenfield sites. That is not a problem. There is no particularly great expense in putting optical fibre to premises. You can do that. If you have conduits into premises the cost is not too bad. It is when you actually have to dig. Wherever there are conduits of one kind or another the costs come down dramatically. We know there are various conduits that are there already in terms of water pipes to houses, storm water drains into houses and sewerage pipes into houses. Maybe these could be used as a way to bring down the cost. I just think these matters need to be studied. But for sure that is the most expensive part. Really the actual backbone of the whole thing is not the most expensive part. That perhaps carries that discussion a little bit further.

Senator MINCHIN—Coming back to my original question, let us say it was Telstra, you still nevertheless believe that it should be forcefully split in two, do you?

Mr Jackson—I guess the answer is that there ought to be ownership and operational separation between the owner of the network and service providers. Telstra has retail services. They should not be under the same ownership as the network owner.

Senator MINCHIN—You have to break the company up?

Mr Jackson—I guess that might be the implication. It is an implication. I am—

Senator MINCHIN—How else do you do it? Is there another way of doing it?

Mr Jackson—That is the conclusion you logically come to.

Senator MINCHIN—You are really saying that to achieve what you are contemplating here, or what you envisage, it does need to be fibre-to-the premises?

Mr Jackson—Yes.

Senator MINCHIN—Because most of the submission to us and the discussion has been on the basis that while the RFP does contemplate FTTN, or to-the-premises, most people assume you are really only by and large talking about fibre-to-the-node because of this issue of cost. Even fibre-to-the-node to 98 per cent of Australia is going to cost at least $15 billion.

Mr Jackson—Firstly, I perhaps need to make a correction to my statement a bit earlier. We were talking about whether I would support the breaking up of Telstra. I guess that presumes one is running with the Telstra network. What we are saying is that we support a separate owner/operator of the broadband network from the provision of retail service providers, et cetera. What role Telstra has in that I think is another question. The investment et cetera that is required needs to be sourced in appropriate ways and some may indeed be contributed by Telstra. It is not necessarily the case that you have to have the same company rolling out the network across the whole country. Why do we think that is a possibility?

Senator MINCHIN—You mean a more disaggregated approach?

Mr Jackson—Yes. In other words, there could be separate infrastructure owners for different regions or different types of infrastructure. There need not be the same ownership. With regard to somehow pivoting the whole thing around Telstra, I feel that my comment was not complete about when we said we must break up Telstra and we will make this thing happen, I do not agree with that. I think you can conceptualise the whole issue in a different way. Yes, we do need separate ownership and operation of infrastructure and service providers, but that does not mean to say there has been to be one infrastructure owner and operator, as long as it links together. That is not a big problem. One needs to think about it differently.

Senator MINCHIN—Do you think it would be better if it were contemplated on a more disaggregated approach?

Mr Jackson—It may well be better.

Senator MINCHIN—Can I come back to Brisbane? What are you able to tell us about your understanding of the current infrastructure situation in Brisbane and current broadband services in Brisbane?

Mr Jackson—I do not see ourselves as being particularly different from any other major city in terms of our issues. What really concerns me is the ability to take maximum advantage of the revolutionary new technology that we have and not to constrain that by trying to retro-fit that to old models. The new IP digital technology is totally revolutionary. We should be building business models around that but taking maximum advantage of the potential of that technology. We should not be trying to be retro-fitting that to obsolete business models. That is the point I am trying to make. I think every major city in Australia would benefit from a system which provided for that. My concern is seeing the possibilities and understanding very, very clearly that we are totally constraining ourselves in an adverse way by trying to retro-fit that because the business models that you require to effectively take advantage of the new technology are not the business models that we historically used and they are business models that do not apply to the traditional vertically integrated telecommunications entities. It is a wrong idea that you need to retro-fit the new technology to those old models.

Senator MINCHIN—You mentioned that the Brisbane City Council has its own optical fibre. How much fibre is there in Brisbane? Do a lot of businesses have their own? Has a fibre network been made in the CBD for example?

Mr Jackson—The Brisbane City Council built its own fibre because the costs of using the incumbent's services were astronomical and it was much more economical for us to build links between certain places such that we could videoconference, send data and operate telephony, et cetera. That is why we did that. As to the availability of fibre, I understand that there is as great a deal of dark fibre in the CBDs but probably not very much out there in suburban areas right now.

Senator MINCHIN—There is nothing to stop any investor coming in and putting in a fibre network in Brisbane?

Mr Jackson—That is correct. Having researched the situation for some years I do believe government involvement is required to move this along in the national interest. In the long-term national economic interest the country will be much more productive with a higher standard of living if that is done. But it does seem that it is hard to get a private consortium together to actually roll this out without some sort of contribution from the government. That does seem to be the case.

Senator MINCHIN—When you say government involvement, you mean government subsidy?

Mr Jackson—A government contribution in some fashion, yes.

Senator MINCHIN—There is another area of confusion in all this. The government at the last election said that its contribution would be an equity investment on which it would want a commercial return, which begs the question: why is the government doing that? Surely there would be private equity available. But are you operating on the assumption that there is inevitably going to have to be a $4.7 billion subsidy for this to happen?

Mr Jackson—I can only say that some form of contribution does seem to be required for whatever reason. I think the interesting thing about this whole IP digital technology thing is that in the sort of history of industrialisation et cetera this is very, very new. We are really there contemplating things that other countries are equally wrestling with. The discussion that I had previously, I believe my paper was based on the best available thought there. We also see that in most other places where the governments have bitten the bullet and are moving towards what appears to be the optimal model, there is always some government facilitation involved. It seems that the private sector has not quite got to the point where it could come and do this spontaneously, with the exception of one example where it has been a significant private sector driven model and that is Utah in the USA. But even there what they call UTOPIA, which is a consortium of a number of local governments in Utah, is a private sector driven roll-out there of pretty much the model we are talking about but the councils there have had to provide some kind of guarantee to underpin it and help take some of the risk out. Even with the most private sector driven one, which is that one that I am aware or, there does seem to be some need for some kind of background support by the local government in that particular case. I could not explain why but it does seem that the private sector is having difficulty in coming to the table totally spontaneously in this space at the moment. Nevertheless, the speed of developments and advancement in this field is going so fast that it does seem that, due to the benefits involved, the government ought to play a role in making this happen. There might be parallels here with other kinds of traditionally government supported cutting edge infrastructures, for example, airports,

railway lines, whatever, the infrastructures that have historically transformed the world. This is yet another one where governments have to play a role in the first instance.

Senator MINCHIN—Most are assuming that the whole of $4.7 billion will have to be simply handed over as a subsidy. What is your perspective on the infrastructure priorities of the country, given that the government's much vaunted $20 billion Building Australia Fund is not going to be much more than about $12 billion given that there are no surpluses left and this $4.7 billion is therefore going to comprise 40 per cent of that? From your perspective as a city that is wanting the federal government to provide money for roads and tunnels and everything else, where does this $4.7 billion rate in the nation's infrastructure needs? Your city and mine cannot supply their citizens with water. Our cities are choking to death on traffic. Is this where we should put our money or should we solve some of our other infrastructure problems first?

Mr Jackson—The interesting thing is the interplay between one and the other. Broadband does have the prospects to reduce costs in other places. It permits tremendous operational efficiencies by government, enabling them to cut their operating costs. It also provides tremendous potential for substitution between actual physical travel and virtual presence. There is the potential for reduction of traffic congestion if people can indeed work from home or from outlying places. The enabling of a visual presence by people that would open up by the high bandwidth is really powerful. The idea that you can effectively be sitting in the same room with a bunch of people but to hear only in virtual terms of big screens and so forth is a very powerful idea. That can take traffic congestion off the roads, et cetera. Potentially one is a substitute for the other. There might actually be some solutions for other problems in this particular issue. That is a view that could be put about it.

Senator MINCHIN—The other thing that has been put to us on a number of occasions is that because by and large this is contemplated as a fibre-to-the-node network it is going to involve around the country tens of thousands of these new nodes being constructed on suburban footpaths. These are not just tiny little things; they are quite substantial structures. To the extent you have competition you are going to have more and more of these things. Is that something that the city council is thinking about and is of concern to it because it comes down to your function at a municipal level?

Mr Jackson—We have become aware of that and we are conscious of the need for some policies around that issue. Yes, I think there is a growing awareness in council that that is an issue that we are going to have to address but I would also like to back-track and comment on the fibre-to-the-node concept. That is, that the fibre-to-the-node concept is actually no better than what we have now in terms of ADSL2. You really need to be going to fibre-to-the-premises. It is an assumption that is been kind of built in but I believe it is a wrong assumption. It is not the ambition that we need to have. We need fibre-to-the-premises. That is where we need to be addressing our efforts.

Senator MINCHIN—I have not looked at this but presumably, with your background in economics, that will be much more expensive than fibre-to-the-node if you have to provide every home and premises with fibre?

Mr Jackson—The answer is yes, there are additional costs there but I think that does need to be looked at and indeed metropolitan areas most certainly need fibre-to-the-premises. Other

advanced countries are indeed doing this: Korea, Japan and Singapore now. The advanced countries are doing this. We must find a way to do it as the technical solution, but that should be a lot less expensive in metropolitan areas than obviously in the low density areas. There are ways to bring those costs down. Once again, the main cost is actually if you have to dig something. If you can actually find ways to get that fibre into the premises without having to do too much digging then that will bring the costs down dramatically. It may not be as costly as we first—

Senator MINCHIN—If there is already some sort of pipe into the house?

Mr Jackson—Yes.

Senator MINCHIN—How is most copper brought into homes in Brisbane? Is it overhead?

Mr Jackson—No. Most of the copper is in fact underground in Telstra conduits. It depends on what—

Senator MINCHIN—Could they be used for fibre-to-the-premises?

Mr Jackson—Yes.

CHAIR—Thank you very much. Thank you for coming early. Thank you for your submission and thank you for your time.

Committee adjourned at 1.03 pm