Australian Government
Productivity Commission

PRODUCTIVITY COMMISSION

INQUIRY INTO THE TELECOMMUNICATIONS UNIVERSAL SERVICE OBLIGATION

MR P LINDWALL, Presiding Commissioner

TRANSCRIPT OF PROCEEDINGS

AT PERTH
ON TUESDAY, 14 FEBRUARY 2017 AT 8.43 AM

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MR LINDWALL: Good morning. Welcome to the public hearings for the Productivity Commission inquiry into the Telecommunications Universal Service Obligation. My name is Paul Lindwall and I am the Commissioner for the inquiry.

I would like to start off with a few housekeeping matters. In the event of an emergency, Travelodge Hotel staff will direct or assist people in evacuating and moving to the Assembly points. We will be breaking for morning tea at around 11 am. We look like we will be concluding the hearing around 1 pm. If you have any particular questions, or wish to present at this hearing, please see PaoYi here at the back, who can arrange you to present or make a statement.

The inquiry started with a reference from the Australian Government in April last year that has asked us to examine "to what extent are government policies required to support universal access to a minimum level of retail telecommunications services?" This includes recommendations on the objectives for a Universal Service Obligation or equivalent, the scope of services to achieve objectives, specific user needs, and funding and transitional arrangements.

We released an issues paper in June and received about 60 submissions since its release, and we have talked to a range of organisations and individuals with interest in the issues. We then released a draft report in December, and submissions for that, in response to that, are continuing to come in.

We are grateful to all of the organisations and individuals who have taken the time to meet with us, prepare submissions and appear at these hearings.

The purpose of this round of hearings is to facilitate public scrutiny of the Commission's work and to get comment and feedback on the draft report. Over the past week, hearings have been held in Cairns, Dubbo, Sydney, Melbourne and Port Augusta. We are then working towards completing a final report to be provided to the Australian Government in April. Participants and those who have registered their interest in the inquiry will automatically be advised of the final report's release by government, which may be up to 25 parliamentary sitting days after completion.

We like to conduct all hearings in a reasonably informal manner, but I remind participants that a full transcript is being taken. For this reason comments from the floor cannot be taken, but at the end of the proceedings you will be provided an opportunity to make a presentation.

You are not required to take an oath, but should be truthful in your remarks. You are welcome to comment on issues raised in other submissions or by other participants at our hearings.

The transcript will be made available on our website following the hearings and you will be notified of that. Submissions are also of course on our website.

You are invited to make some opening remarks of five or - I'm pretty flexible about that, actually. Of whatever length you want, as long as it's not too long, and you're keeping us - and then we have a question and answer.

Before I go on, I'd like to also notify you that I'm also conducting a study into transition regional economies, and while I was in Port Augusta last week we went to Whyalla to talk about issues relating to that. So if you have an issue in telecommunications in regional and remote Australia, you may also be interested in that particular study, and the terms of reference for that of course are on our website, provided of course you can access the internet, which is probably the purpose of today's discussion.

So I'd like to invite Bruce Bebbington to - if you could just state your name and give a little bit of a statement, that would be great, Bruce.

MR BEBBINGTON: Bruce Bebbington. We live and work on our farm. We have no mobile coverage. The last customers on a 17 kilometre rural line for a rural exchange. That exchange is 15 kilometres from the town exchange. We have been on the Australian broadband guarantee, the interim satellite service, and Sky Muster.

With regard to the future of the copper line network and exchanges in areas outside of the NBN fibre network, until last December Telstra has maintained it cannot run copper lines across regulated exchange boundaries, even temporary lines. Where mobile coverage actually exists, the copper could be rationalised. For example, in our area the copper may be needed to serve the last three of 17 kilometres on one exchange, three of 15 on another, and five of 15 of another. Current 47 kilometres of copper is needed, but only 20 kilometres will be necessary in the future.

Telstra is paid to maintain that 47 kilometres, but changing exchange boundaries could reduce this to 20 kilometres of lines from a town exchange. Nationally, the USO cost could be reduced with line and exchange rationalisation and provide better services due to shorter distance from bigger exchanges.

Is the USO and safeguards working at the moment? No, I don't believe so. The National Reliability Framework - only Telstra is required to report under the NRF. The safeguard only works if Telstra records all faults, when they are lodged, and that the faults are closed when the fault affecting a premises is actually restored.

NRF1, copper services subject to CSG that did not experience a fault in the last month, same. If Telstra doesn't record the fault, or closes the fault without repair, the data isn't accurate. NRF3, 3(a) is three faults in 60 rolling days, and 3(b) is four faults in 365 rolling days, involves reporting to ACMA, and identifies the services and when the repair is scheduled.

NRF3 allows for CMA to detect issues in an area or individual services, and can step if the timeframe or fault recurrence is inappropriate. ACMA says NRF3 reports are commercial in-confidence, even though Telstra is the only party. If a customer knows

about NRF, they and the TIO, the ombudsman, can't access reports to see if it shows the correct number and date of fault reports, closure dates or scheduled repair timeframe given to the consumer and the TIO.

The NRF should be reported by all providers across all modes of communication, to ensure that all faults are acted upon. The customer should be advised of the report, and the TIO should have access to that data.

The customer service guarantee of 2011. The guarantee only protects those with copper and no mobile coverage, as anyone with mobile coverage either receives immediate at-no-cost redirection of their phone, or a loss of entitlements if they refuse. There is no payment if the fault is not recorded. If the fault is not recorded at the time that it is lodged, there is a delay in repair and a loss of CSG.

When the provider closes a fault without repair, there is no compensation, only a further delay waiting for the fault that's never going to be repaired. Defined repair timeframes do not reflect the four hour difference in reported repair times nationally between urban and rural, yet the rural non-mobile customer has no entitlement to repair or CSG until up to six days.

Under 12(2) of the standard, if a repair does not involve plant work or a visit to customer's premises, restoration is the end of the first business day after report. This is not applied, the CSG is not paid, and the TIO does not even meet this timeframe.

All the timeframes start after the provider receives a report, yet Telstra will not allow lodgement online unless the customers acknowledge that CSG calculation does not commence at the time of lodgement and electronic acknowledgement, only if and when Telstra enters the fault in their system, which can be up to five days later, as our experience.

Mass service disruptions and local service exemptions, for which providers are required to advise consumers if they are or are likely to rely on, further impact on repair times and entitlements.

Critical impact summaries. CIS do not provide clear information for comparison, contrary to what ACMA says, as a month is not a month. Monthly plans are now 28 days, 30, 31, or calendar. There is no comparison of what the monthly or annual costs would be. A 28 day monthly plan actually has 13 months in a year. Sky Muster 24 month fixed term fixed price plans state that all terms and conditions of pricing, data and speed can be amended by the provider. Over charging compared to CIS statements occurs. ACMA, TIO and ACCC take no action.

The CIS as part of a safeguard does not provide any consumer safeguards, with variable comparison periods, variable fixed price speeds, and data and overcharging. The reported comments for procedures - all telecommunication providers across all modes should be required to report, not just Telstra.

Enforcing a regulation by ACMA, TIO and ACCC. In 2015, ACMA advised me that the federal government had a deregulation policy, so it would not enforce the CSG standard. TIO says enforcement is the role of ACMA. ACMA says speak to the TIO. ACCC says not their job unless it's unconscionable conduct or false advertising. Consumer Affairs all say go to the TIO. The safeguards only work if there is monitoring, regulation and enforcement.

Lack of mobile coverage. The draft report relies heavily on the claimed mobile coverage of 99.3 per cent of the Australian population, and that STS could be provided by mobile for 320,000 premises on the NBN Sky Muster.

In my submission I challenge this. Telstra's response to the draft, and evidence given at the Sydney hearing on January 31, dispute the 99.3 per cent. Telstra, page 7 of their submission on 211:

> *While mobile coverage has improved over the years and now reaches the vast majority of Australians, the fact a customer's residence falls within a mobile coverage map does not automatically translate into an ability to deliver STS to that residence. Telstra is unable to determine what percentage of the Australian population have mobile coverage.*

I also note that the Sydney hearing on January 31, Commissioner, you asked a question of Telstra and referred to 400,000 people that are supposedly in the satellite footprint, and we have an estimate of 90,000 not having mobile coverage.

NBN is providing satellite coverage, as you referred in the draft, to 413,000 approximately premises and businesses, or over 1,000,000 people, around 4.5 per cent of the population, not 400,000 people.

As Telstra has now admitted that it does not provide mobile coverage to 99.3 per cent of Australians, only a vast majority, no decisions in regard to the copper network based on mobile coverage on 99.3 per cent should occur, until the actual coverage can be determined.

Also a direct comparison of NBN fixed coverage and mobile is not possible, because NBN fixed is often roof mounted antenna, whereas a mobile would be at, say, table level.

"Capable of delivering" is not a standard or a safeguard. In the draft, "capable of delivering 25 megabits a second" is used and discussed as the baseline. This is not a standard or a safeguard. The interim satellite was capable of delivering 6/1, but did it ever do this? As the government over-sold the satellite beyond its capabilities, speed dropped, data was limited to two, five or ten gigabyte a month. Nothing was done about helping those customers, but the service could be described as "capable of delivering". The benchmark must be an actual minimum delivery speed, not hypothetical.

The standard must be "delivering 25 megabits a second", so that when there's not, consumers can seek some recourse or improvement. If a consumer, however, elects to

pay for 12/1, that's their choice. Speed expectations worldwide would continue to increase, as will demand for data. The USO should stipulate a minimum speed now for satellite, fixed and fibre, plus set minimums for future dates to ensure Australia remains on par with the rest of the world.

Minimum data limits should also be imposed, so that every satellite customer can expect a minimum level of data now and in the future. That's service disruption and local service exemptions. Critical to the USO, reliability, and the CSG are the exemptions available to providers. When you report a fault, if an exemption is in place, the providers are required to advise you then or when they first become aware of an exemption affecting your service. The CSG standard 2011 sets out the requirements for an exemption, as publicly notified, like MSD, shall be advertised in a paper in the area. That doesn't happen, with New South Wales exemptions in Melbourne papers and Western Australian exemptions in Northern Territory papers. Specify the dates exemptions apply - yes, the dates advertised differ from what's in the notices. For extreme weather, be one of the defined events. For extreme weather, meet the defined criteria. For extreme weather, include evidence of the weather meeting the defined criteria. A forecast is not acceptable. Show geographical area, show range of numbers affected. Can only be whilst the extreme weather is affecting the restoration, and can only be due to or associated with events outside the provider's control. You can't extend the exemption after it's expired.

ACMA said they do random checks. TIO says they can't challenge MSDs that are approved by ACMA, and ACMA say they're not approved. Local exemptions have a ten day notification requirement which is not adhered to, and these exemptions become invalid. The TIO is aware of this but has not issued a position statement.

In conclusion, the current system I don't believe is working. We have experienced. We had a period recently of 381 days consecutive continuous faults, as confirmed by the TIO, across two services. It took nearly three years to get the matter sorted. It isn't working for rural people, and we don't have the mobile coverage, and we need to investigate the true mobile coverage before any decision can be made.

MR LINDWALL: Well, thanks very much for that, Bruce. Could I ask - just the point about the 400,000, it was actually 400,000 premises, and similarly the estimate we put in our draft report for people in that satellite coverage area was for 90,000 premises, not people, so - but apart from that - and you can challenge that, of course, as you say.

Could I start with the mobile phone coverage? Now, you live about 15 kilometres from the nearest town, I think, in Bridgetown, is that right? And what's - how far do you have to travel to get a mobile phone coverage, would you say?

MR BEBBINGTON: The issue is the terrain, because we're a valley. We would have to get - at about 10 kilometres closer to town you'll pick up any SMS that might have occurred.

MR LINDWALL: Yes.

MR BEBBINGTON: But you have to then park on the side of a road closer to town to get a signal. Generally you wait till you get to town.

MR LINDWALL: And so a Yagi antenna or something wouldn't help you in that - - -

MR BEBBINGTON: When we were changing - getting the Australian broadband guarantee, we actually got the most powerful aerials that could be provided at the time, put them on a very large pole on our roof, and weren't able to get a signal. NBN actually provided some figures and they confirmed there was a hill in the way. Our aerial would need to be about 300 feet to get within mobile coverage.

MR LINDWALL: Yes, all right. And you're right about the estimates about the coverage. I mean, Telstra does talk about different coverage on 99.3 per cent of Australian premises being within a mobile phone coverage. It's very important to distinguish premises from geographic area, but of course the quality does vary, obviously, and it does get affected, I think, by weather occasionally, too, mobile phone coverage, of course.

So - now, on the NBN, could we talk about it a bit? So you've had the interim satellite service, and now you've got the Sky Muster?

MR BEBBINGTON: We also had the ABG, 20 per cent.

MR LINDWALL: That's true, yes, and could you comment on the quality of the works that were provided for the Sky Muster? Because I've had some mixed views expressed in different hearings about - - -

MR BEBBINGTON: The installation?

MR LINDWALL: The installation, yes.

MR BEBBINGTON: The installation for us went very quickly, I think within a week of the application being lodged we got confirmation. The only issue that came was a question of whether they were removing the old equipment or not, which they decided was prudent.

But no, the service was installed quickly. Probably less - we were offered a date about a week and a half after the application, but we weren't available, so it was about three weeks, so we can't complain about that, and by the time the technician left the premises we had a service.

It wasn't until September that we started to experience any issues. We were with Harbour ISP, and in December they changed us over to a larger server, because they had had problems as well, and after that we've had significant drop out - reduction in drop outs. We've actually since changed to Westnet, and we've only had one drop out in the

last four weeks, but reliability-wise, it has had issues, but the installation process was very efficient.

MR LINDWALL: Yes, and the quality of the installation was quite good then? Because obviously it's important that the satellite dish be pointed exactly right and be the right size for your location. And how have you found dealing with the retailers? Since of course NBN is a wholesaler, and you have to deal with retailers, and are they good at dealing with the problems that are their problems, and passing on to NBN which are its problems?

MR BEBBINGTON: In regard to applying for installations, we were one of the early applicants because it was June. They didn't have a lot of information. One provider was adamant on their form that they had to have an ability to have line of sight to the north or north-east of the location. Nowhere in Australia under Sky Muster can you be directly south of - and even with their technical people, they said, "No, because the satellite's in Indonesia," and would take no clarification.

In regard to the churning or the changeover from Harbour ISP to NBN - to Westnet, Westnet flatly said it could not be done, and it was about a six week backwards and forwards discussion about whether they could activate a second port on the modem, which NBN kept on saying that they could. There was a three way call with NBN, who said, "Yes, we can," and Westnet said, "Well, you're telling the guy you can't." He said, "We've just told you we can."

And it took quite a period of time, and then suddenly got a call out of the blue from Westnet to say, "Yes, we can do it," so they've obviously come to a - the biggest thing I think people are facing is that because the major phone providers were not early adopters, people have gone to other providers, and that has then left people with - if you've got a business or I've changed my email addresses, the cost in that - in our case we ran both services for nine months.

MR LINDWALL: When you say "both services" - - -

MR BEBBINGTON: Both - we paid for the Westnet service - - -

MR LINDWALL: Yes.

MR BEBBINGTON: - - - and we paid for the Harbour ISP service, even though Westnet were providing no service, in order to maintain the account so we could do the quick turnover.

MR LINDWALL: Okay.

MR BEBBINGTON: that has been one of the big transitional things, and NBN can't force a retailer to do anything. I have spoken with NBN a number of times, and even though they make it clear, and I know they're not - they don't have customer interface,

because they don't have customers, they have always been very good and very knowledgeable in information they provide.

MR LINDWALL: Yes, yes. And could you - well, obviously in your introduction you outlined it a bit, but let's get into the actual NBN service that you get through the satellite. Have you tried making phone calls, voice calls?

MR BEBBINGTON: No. We - I've actually been involved with matters to do with the phones for a while, and did some early work with NBN on satellite about some issues, and it's always been quite clear that it would not suit phone calls, and we've never tried.

The big thing is when we were having reliability issues, we didn't need that. Having - because of our circumstance of not working in town, we rely 100 per cent on what we've got on the farm. If we don't have a landline, we're done for, so we aren't prepared to take the chance of not having a landline, because we need it for reliability, both for our communications - I'm involved with two volunteer fire brigades - and also communications in the event of a fire. My wife stays behind.

For us, we haven't attempted to do the satellite, because we need a guaranteed system.

MR LINDWALL: But you can still use it? You could have - you can use both, as far as I can see. You could be using your landline, but you could also use the satellite as a voice service, even if it's not the same standard?

MR BEBBINGTON: I don't believe that the satellite would provide. I think one of the other issues that hasn't been looked at is that the atmospherics that would affect the satellite, travelling through effectively the layer of weather to get from supplying Cairns would be significantly different to what it has to supply on this side, because it's - even though the satellite's 34,000 kilometres in the air, it's another 5,000 or 6,000 at an angle through the weather.

So I don't believe that it would. We actually had one person who uses Skype from a metropolitan service to our phones and we have enough trouble trying to listen to those calls across our landline, so we would have trouble with - the other thing that I - in regard to the use of NBN for voice, Sky Muster, is that's - there's additional issues of the potential for it to fail as far as electricity, but there is also the cost involved, because you have to buy additional equipment, a modem, an ATA. There are issues with regard to if you're running multiple cordless phones off a satellite link, that can exacerbate the problems. And they are the sort of issues which, regardless of whether it's any satellite system, make the situation worse.

But no, we would not give the satellite a try, because we don't have the - - -

MR LINDWALL: I mean, you can, of course, as you say, set up a satellite service with the voice prioritised like you've suggested, but you could also use, you know, Skype or

some other service directly from your laptop computer without any phone, and I'd be interested to see how you would have found that, that's all.

MR BEBBINGTON: The bit of research I've done indicates that Skype is worse than using the direct router modem setup, so that would actually - - -

MR LINDWALL: Because it's an over the top service, so it's not prioritised, but the - now, in your introduction you mentioned that some of the copper should be increased, but I wonder, is that really a good idea, though, because - - -

MR BEBBINGTON: Decreased.

MR LINDWALL: It's - - -

MR BEBBINGTON: Some of the copper decreased.

MR LINDWALL: Yes, but weren't you saying that we should be putting new runs of copper out there?

MR BEBBINGTON: No, no, we - where we are - - -

MR LINDWALL: No? Sorry, I must have misinterpreted.

MR BEBBINGTON: Yes, we're the end of one line. Another line finishes at the end of our property, from another exchange. Another finishes about half a kilometre away. They run from three different exchanges. Collectively they currently are 47 kilometres of exchange. With the increased mobile coverage that Winnijup Tower is going to improve, there will only be a certain - a group of customers in that end of each of those three lines that won't have mobile, so they will rely on the copper.

If we can rationalise that service from this exchange, cut off their link to those two exchanges, we can reduce the requirement from 47 to 20 kilometres.

MR LINDWALL: I see, yes, yes.

MR BEBBINGTON: And I think that's something that can be repeated in a lot of places. It also raised the issue of, if you have mobile coverage for the first, say, eight kilometres coming from a town where there's currently a copper line, it may be feasible to say because there is mobile coverage and it's proven, there will be no requirement to provide copper in that area. But beyond that we have to.

So they might be able to remove customers from the copper network in that regard, reduce the load on the system, and perhaps allow - reduce maintenance costs. Because every link to a house is another connection point, another bit of servicing that is the responsibility of Telstra until it gets to the house.

MR LINDWALL: So I just wanted to clarify that, because my theory would be that if - for maintaining the existing copper network through the USO, that's one thing, but if you were to put in new services, probably it's best to be fibre optic rather than copper.

MR BEBBINGTON: When you've only got - when you're probably only servicing three customers over 17 kilometres, I imagine they would maintain what they've got now for as long as possible.

MR LINDWALL: Yes, maintain, but into new services, yes.

MR BEBBINGTON: Well, actually, in the work that was done in 2013 they covered - they uncovered lead lines, not copper. That's how old our network was. So that's the age of some of the phone systems that are actually out there.

MR LINDWALL: So they're lead lined?

MR BEBBINGTON: Lead lined.

MR LINDWALL: Lead lined copper?

MR BEBBINGTON: Which is the predecessor to the copper network.

MR LINDWALL: That's pretty heavy. You mentioned the Telecommunications Industry Ombudsman. How widespread do you think the knowledge of customers in the various regional areas are of it?

MR BEBBINGTON: I think people are aware of it. We get a lot of people who are just neighbours talking about things, say, "I'll follow something up with the Ombudsman." So I think they're aware it exists. Whether they take advantage of it, I don't know. I think, though, a lot of people who have dealt with the Ombudsman tend to have a feeling of, it's futile and long drawn out.

That's - but I think a lot of people are aware of it. Whether they're aware of what their issue is, whether (a) the issues exists, and secondly whether it comes under the constraints of the TIO, that's the big thing the TIO faces, is a large number of things aren't relevant to them.

MR LINDWALL: Yes, and how widespread do you think people are aware of their consumer services guarantee under the Universal Service Obligation?

MR BEBBINGTON: I don't know how much - and it was interesting, I referred in my submission about the fact that in the draft it referred to people are waiving their rights, and I queried whether that is simply the - I think it's 5.5, the waiving of the rights, or whether it is specifically - whether you're just referring to when somebody accepts a mobile service they're waiving their rights, so that's what I wasn't sure of.

I don't think people are, because - aware of their entitlements, because first of all the main place you get your CSG notification is in your phone book, which you don't get. You don't get phone books delivered anymore. We have to go and pick up our phone book if we want one.

Most people aren't - it isn't clarified - you aren't told whether you're a business plus two or a business plus three customer, you just have to work that out. As I say, people aren't aware of the next business day requirement for - if it's fixed without them having to attend your premises, or - and nobody tells you that. The TIO wasn't aware of that. So if - I don't think people are aware of their entitlements.

Basically a lot of people in country areas, they just get used to putting up with things, so they're probably less likely to follow up on a issue or a complaint than other people would be, so that probably reflects in lower complaint and CSG rates, because they just go, well, we're used to not having a phone, it's just part of being in a rural area.

It's not acceptable, but that's I think what a lot of people just treat it as, we'll just get on with doing our job and we'll get a phone some time.

MR LINDWALL: Well, my mother lives in a place without mobile phone coverage, and she's had her local phone, her USO phone, off for more than a month on two occasions, so it's not unusual, and that's over in New South Wales. Have you heard of people getting compensation for failures of their CSG and that are above the statutory timeframes for a repair?

MR BEBBINGTON: Most people don't refer to it. A lot of the debate that we had with Telstra during the 381 day period related to the CSG entitlement. There is a requirement that if there's an exemption in place, they have to advise you. That wasn't happening, and it was interesting, the ways in which attempts were made to get out of paying the entitlement. I know Boyd's here, and we've had a few discussions, and Boyd actually did get an ex gratia payment for one matter back in 2012.

We had to fight every inch of the way to get our entitlements. We're medical priority, which automatically would indicate that, where possible, we've got 24 hour restoration, and where possible and when available, Telstra has a commitment that they would give you an alternative, like a satellite phone.

380 days, so let's say 13 months. We were never offered a satellite phone, even though we were dealing with TIO for a large period of that, the national complaints manager and the CEO's office. In fact the CEO's office said, "Well, you're on a farm, why don't you have your own satellite phone?" And I go, "No, that's not the requirement. I don't have to have my own satellite phone, because you won't repair the service under the USO."

In total, there was a number of exemptions that were claimed, a number of the local exemptions, which I actually think was the first person who ever succeeded in

challenging Telstra on the 10 day rule. The TIO said, "We didn't know about that," and they applied it.

Basically the amount of CSG that was paid in relation to the 13 months of faults, by the time, two and a half years later when the level 3 investigation occurred, finalised, and the conciliation period, we probably received, as final settlement, 40 times what Telstra actually paid for those faults during that period of time, so I think perhaps - no, I don't think people are getting their entitlements, and I know that I had to - I had to know the act inside out to challenge Telstra, to challenge the TIO, to challenge ACMA, in order to get those entitlements, and the point we actually made through the whole process was not - I'm not after money. All I want is a phone that works.

And that basically is what people want. They want a phone that works. Whether it's a landline or whether it's a mobile or if it's their satellite broadband. They just want something that works. That's what you're paying for. That's what people expect.

We said, "Look, all we want to do is try and get the system working so that the next time I ring up with a fault, it'll get fixed." And I said, "I'm not after the money." But unfortunately both the TIO and Telstra can only think in terms of money when it comes to compensation. They can't say, "Well, how about we do this?" and I go, "No, let's see if we can sit down and look at a procedure."

Now, even Judy Jones, the TIO, when I spoke with her last September, she - and I said, "Look, these are the things that came out of it, that for example the TIO does not take into account voice messaging services in working out a working services." Now, we have had voice services for 25 years, and Telstra in conciliation said, "We consider a working service to be, if your phone is not working and you have got message bank and the phone is fixed seven days later and you get that message, we've made that communication." That was what Telstra used as their standard of a working service. I don't think anyone in the country would say seven days from the time you ring me till the time I get the message is good.

There are a number of failings in the system, and that's why I refer to things like the enforcement, the application, you know, in regard to MSDs and those service disruptions. I have been successful in getting five changes done through ACMA, and Telstra has adopted some of those changes, so that's an improvement. Are they doing less MSDs? No, what they are doing is they are actually doing it correctly so they comply with the provision. So I'm not saying they're not entitled to, I'm just saying these are the rules, you stick to the rules.

If you make a declaration that's outside of those rules and is not valid, you lose that entitlement. Telstra should have the legal capacity to understand the standard. If I can read it and understand it, they should be able to prepare their notices to ensure they have their legal protection. That's what I've been arguing for three years, to try and get - not to attack Telstra, not for people to get money out of Telstra, but just say a set of rules, do them properly. The USO says this, you have to maintain a phone service.

That is what my expectation is, because there's 23 million people out there who don't know what they are entitled to, because they don't have the act in their back pocket.

MR LINDWALL: Yes, yes. So just to clarify, you mentioned earlier, you're a priority - your household is a priority assist customer? Okay. Now, do you think it's right that you have to study the act so thoroughly to be so knowledgeable about all of this? Do you think that's a reasonable expectation on customers to have to be so across all of the detail?

MR BEBBINGTON: The standards and requirements aren't that difficult. People shouldn't have to know them. The bit that is in the back of the phone book, or what they can find on a provider's web page or the TIO, is sufficient.

People shouldn't have to get to the point of ringing up their provider and saying, "Hang on a minute, I didn't have a phone for two weeks, and here it is, I don't have any compensation." Now, for example, one of the things is that a provider has 14 days from the closure of the fault in which to assess CSG, and then has up to three months in which to pay it.

But when it comes on your bill, it doesn't tell you, it just says, "CSG payment." It doesn't actually say what it was for or when it was for. And this is one of the issues the TIO had. They actually identified, "We worked out CSG was paid on this day for this fault." But they actually had payment before the fault occurred, because it was actually a three month ago one.

So there are a lot of things that the standard is sufficient for what consumers need to know as their protection, but the question is, is anyone applying it? And that's what people have to fight for. And I don't think that the person they turn to, the Ombudsman, has the knowledge. They say it's their workload, but in the process they've laid off a lot of staff, even though the workload's gone higher with things like increased internet, but it was astounding that they did not know certain concepts like the approval of mass service obstructions.

They said to me, "ACMA approves MSD, so we won't challenge it." I go, "Well, that's interesting, because I've just gotten on the phone to ACMA and they've said, 'We do not approve them,' and here is a reference to their website." The TIO guy says, "Well, we didn't know that."

Now, how can somebody who is the Ombudsman, who is supposedly making the determinations on what is fair and appropriate under the legislation, be caught out by not knowing a basic tenet of the legislation? And I - my review document I think was 90 pages, and within an hour of that going in, that 90 page, they'd agreed, "Yes, we're going to give you a review," because I had pointed out such bad things about the processes the TIO have used in their determination, which contradicted their position statements.

Now - no, people shouldn't need to be as knowledgeable as I am. Unfortunately for Telstra and the TIO, I'm a legislation person, I have been for many years.

MR LINDWALL: Yes.

MR BEBBINGTON: So - and if somebody throws a rock at me, I'll throw it back as much as them. If there's a set of rules and they're not going to stick to them, I'll say, "No, you've got to stick to those rules."

MR LINDWALL: Now, we don't have much more time, so I'll just ask you a couple of quick points, if you don't mind. One is my - in our draft report we said that if you had a good mobile service and the NBN Sky Muster was properly laid out - in other words, finalised - that would be sufficient. You wouldn't need to have the USO. Is that - would you - if you had a good mobile service, would you forego your - - -

MR BEBBINGTON: My - what I would consider the USO could end up with this. For those customers who have to have copper landline, that they are still provided with a guarantee. For those that have mobile service and it is an acceptable standard and a consistent standard, that becomes their baseline. And the same would apply for broadband, that - but there has to be you do have that service.

I don't believe that the voice over Sky Muster will become an effective service. The technology I don't think is quite there yet. Next round of satellites and the other thing, possibly it will be.

MR LINDWALL: Now, finally, you haven't mentioned anything about the Mobile Black Spot Program. Have you got any comments about it?

MR BEBBINGTON: The Mobile Black Spot Program, yes, I have had a few things there. One - I contacted them recently in regard to this submission. They actually couldn't tell us if the round 1 sites had been built, and they can't tell whether they're 360 degree or partial, like, north-south orientated. Even though some were approved as such, they don't know if that's what's happened.

So the funding, you're saying, so if a company comes along and says, "We would like to build a tower here," provided with a subsidy for 360 degree coverage in this approximate area, fine, here's the funding. "We've decided to only put a north-south, actually." There's no check. So there's a failure there, because the federal government is providing on you get 360 degrees and it's not happening.

There is also the issue that there's not the follow up, but I also wonder whether, like, raise with - and Boyd responded back in December about one near us that's north-south orientated. Now, originally the Shire was told that's 360 degrees, and was shown the maps of 360 degree coverage, and yet it is only north-south. It was apparently only ever built as north-south.

So I wonder whether the Black Spot Program is looking at a situation like that where for X dollars we can put in a new tower and benefit this area, these people, but if we've got north-south axes - if we made that 360, which is only going to cost this much, because

the infrastructure is in place, can we provide as good an improvement in coverage and better spend? And I don't know if that is being looked at, because first of all they don't know what's out there, they don't know what has been built that they've already paid for.

MR LINDWALL: Okay, that's interesting. I haven't heard anyone mention north-south, in other words 180 degrees coverage, rather than 360.

MR BEBBINGTON: That may be - in our case the South-East Highway is Highway One, and the original program revolved primarily about trying to increase the coverage on Highway One. That was the first objective that the government was trying to achieve, so a lot were put along the highways to provide that coverage.

And my understanding was they were supposed to be 360 degree, but it turns out some were done purely to access the highway, and that that is where we possibly can get significant mobile coverage gains with minimal cost. The extent of that, I don't know whether it was just the Western Australian program for mobiles, because the WA government had its own program, whether that's where the discrepancy occurs, I don't know.

MR LINDWALL: Yes, well, I'll look at that. Thank you, Bruce. Do you have any final comments before you go?

MR BEBBINGTON: I'll be at the end of the day, if I get a chance.

MR LINDWALL: Yes, all right, thank you. Now, could I invite Robert Smallwood? Is Robert here? Yes, hello Robert. Please. Good morning.

MR SMALLWOOD: Good morning, Commissioner.

MR LINDWALL: Please introduce yourself and just say - - -

MR SMALLWOOD: I've just prepared a few materials that perhaps I can give you a copy of, and also provide a few for the audience in the event that they'd like to have a look at these.

MR LINDWALL: Certainly. Thank you.

MR SMALLWOOD: And here are three additional copies. You can see those.

Good morning everyone. I'd like to begin by thanking the Commission for agreeing to host an inquiry in Western Australia. We very much appreciate the opportunity to put our views forward in this state, as we do represent a fair chunk of the entire continent. I'd like to also - - -

MR LINDWALL: You probably should introduce yourself for the record - - -

MR SMALLWOOD: Sorry.

MR LINDWALL: - - - and talk about the organisation.

MR SMALLWOOD: Okay. My name is Robert Smallwood. I'm the Midwest Digital Economy Strategy Manager for the Midwest Development Commission, and we're based in Geraldton in Western Australia. 25 years in the telecoms, IT and electronic media business. Senior Manager at roles in places like Honeywell, Telstra and other technology companies, as well as senior manager at (indistinct), construction roles and operation and other IT roles. I have also spent the last four years in local and state government in Geraldton in the regional digital communications space, and many years ago spent a number of years as a technician and engineer responsible for maintaining broadcast transmitters in America.

I would like to begin also by a formal note that if everyone can be aware of, we are a state government organisation, and as a result of that we are currently under the 2017 caretaker convention. I would also like to acknowledge the local member for the agricultural region, Martin Aldridge, who is also with us today, and accordingly, the positions that are espoused in this presentation are based exclusively upon technical and operational criteria, and are not intended to be necessarily critical of or supportive of any political party or the policies, the platforms, or the positions held by any political party.

So now that we've got that out of the way, most of you in the room here I'm sure would be aware of the regions of Western Australia. 598,000 residents live outside of the Perth metropolitan area, and that's 23 per cent of the state, and even though it's only 23 per cent of the population of the state, those 23 per cent represent 32 per cent of the economic output of the state, and 14.6 per cent of Australia's GDP comes from Western Australia.

As a separate country, Western Australia would be amongst the top 50 economies in the world by GDP. And very important to the regions in Western Australia is global competitiveness. If Western Australia is going to remain globally competitive we need world-class telecommunications.

So I am going to try and keep the intro very brief, even though there is a significant amount of detail that is in support of our position later on. I'll perhaps take a couple of minutes and just go through the key points that we'd like to make, and then perhaps the Commissioner can either challenge some of those points or perhaps ask for additional information as the situation warrants.

As I said, reliable telecommunications is critically important to global competitiveness for this region, and it is becoming more so by the day. There are quite a number of aspects of the revised USO that are being considered at the moment, including the addition of broadband as an essential service to the USO, and others who are in the room today will be addressing those issues. I just want to point out and clarify that my focus today will be exclusively on the voice services. I will not be addressing the broadband issues related to the USO.

There is currently a consideration of the existing USO voice services that are in place being provided by Telstra being delivered over copper or in radio networks, and the suggestion is that some of those or all of those could be replaced by Sky Muster or mobile networks to provide voice services.

And in essence, we have three major concerns about that. We believe, number one, that this would significantly degrade the customer experience for voice services, and that troubleshooting and maintenance of satellite services without access to a landline or a mobile service would become extremely problematic, and that the evidence to date suggests that Sky Muster's ability is insufficient to ensure a high probability of availability during an emergency.

Some additional information those key points. With respect to number one, the customer experience, according to the International Telecommunications Users Group user research, a Sky Muster to Sky Muster phone call would result in, quote unquote, "nearly 100 per cent users dissatisfied". And that comes from the ITU standardisation sector of transmission systems in media, digital systems and networks for recommendations G.114, G.109 and G.107.

It is not acceptable that an existing high quality voice service be replaced with a lower quality service. A degraded quality of voice calls and consistently poor customer experience is likely to negatively impact on regional competitiveness.

Extremely importantly, with respect to item number two, troubleshooting, troubleshooting a failed Sky Muster service without access to a landline or a mobile phone is not a reasonable expectation of a non-IT specialist.

And number three, with respect to emergency services, the reliability targets of the Sky Muster service and the service restoration targets, which are currently 10 to 90 days, are insufficient to meet public safety requirements. For example, in Senate Estimates in 2016 it was stated that during October of 2016 the average time for Sky Muster complaints to be resolved was 21.4 days.

Further, from the information that is available, Sky Muster does not appear to be meeting its reliability target to date, and quoting from the NBN Chief Customer Officer, John Symons in yesterday's Port Lincoln Times, Symons said so far Sky Muster had not met anyone's expectations.

So following on from that, I'd like to highlight two very recent specific examples that relate to these issues with the provision of voice services over Sky Muster satellite. One was a phone call that I received yesterday morning from a lady who's based in Horrocks, which is about 60 kilometres north of Geraldton. She has been, for a number of years, connected to the NBN interim satellite service, because that's the only option in their neighbourhood for broadband services, and that service has been working for her, during the time that she's had it, reliably, without any substantial numbers of complaints, which I found quite surprising.

However, she was advised about a month ago that the interim satellite service would be disconnected at the end of February, and if she wished to continue to have broadband services she had no choice but to switch over to the Sky Muster satellite. So we assisted her with contacting her existing internet service provider, who organised a technician, who turned up, conducted the installation, and in speaking to her yesterday, everything with the installation went well. The service was switched on, the technician checked out the service, the reliability was to an acceptable standard, and the technician left.

She used the service for the remainder of that day, went to bed on Tuesday night, and got up Wednesday morning to find that the service was no longer working. So that was Wednesday, a week ago tomorrow, and in the meantime she advised that she had spent seven hours on the telephone, using her fixed line service, provided under USO, with call centres in a variety of places such as South Africa, Australia, Philippines - she mentioned a couple of others that I forget at this stage.

But seven hours on the telephone, and the service still was not functioning, and the final advice she received yesterday afternoon from her service provider's call centre staff was that "someone will be in touch sometime within the next 10 business days". Thank you very much.

Now, I'm afraid to advise that that is an all too common experience that we hear about the satellite service in our part of the world. I had high hopes when the announcement was made, but unfortunately there are still regular instances of this happening.

Now, I'd like you to imagine what it would be like for this lovely lady in Horrocks had she had no Telstra-provided USO phone service. Well, some people say, "Well, surely you can just us a satellite phone in those circumstances." Let's do the sums just here on the back of a serviette or in the air. I haven't used a satellite phone and had to pay the bill for a while, but the last time I checked, the cost of a satellite phone call was around about $8 a minute, so if we take $8 a minute, multiply that times seven hours, my sums come out that's somewhere around about $4,000 in phone calls, and her service still isn't working and she's supposed to wait another 10 days.

Those are the kinds of typical examples that we find when satellite services go down, and if you could imagine yourself in a remote area where, for example, in many places in the mid-west part of WA where we operate, it's often an hour's drive or more to the nearest second telephone. Sometimes even further than that.

And troubleshooting in an environment where you have a satellite voice service, that's not the same as a fixed line analogue mobile phone - or analogue fixed line service, is very complex. You can't just pop down to the neighbours, get on the phone with your service provider, and troubleshoot what's going on with your satellite service. "Is the blue light on on your modem?" you might hear from the call centre. "Well, I don't know, I'll just pop in the car and drive 100ks back to my station and then I'll come back and I'll continue the conversation."

You can imagine it's just simply not a practical environment to troubleshoot a complex system that is inherently, by its nature, complicated and always going to be difficult to troubleshoot.

That is a very typical example. I'd like to relate one other example, that was published in a blog of one of the most highly regarded communications consultants in Australia, whose name is Paul Buda. He lives in a place called Buckety. Now, that's about 100 kilometres outside of the Sydney CBD. His only option for broadband services there are ADSL services or the Sky Muster satellite.

Now, he's got both of those at the moment, and writing on 7 February 2017, Paul Budde says:

> *We now have two broadband access services in Bucketty. When the Telstra ADSL service in our area is being used heavily, late afternoon/early evening, the ADSL service slows down, so I then change over to the satellite service. That service typically cuts out every 10 to 20 minutes or so and then reconnects automatically, mostly within a minute. When I eventually tire of these dropouts, I switch back to the ADSL service in hope that the service performance there has improved, and remarkably, this seems to work most of the time.*
>
> *Is this satisfactory? Of course not. Need to have two services in order to get some sort of accessible online service connection is appalling, but I don't have much choice, as there is no light at the end of the tunnel.*

Et cetera, et cetera. So those are two very typical scenarios that we hear on a regular basis. As a result of that, we don't believe that the proposed replacement of the existing USO services for voice services with satellite communications or with mobile communications would be sufficient to provide an equivalent or better service than what the customers have today.

I do also refer to a document that I found in relation to this USO inquiry by Coutts Communications, Better Telecommunications Services For All Australians, which states on page 13:

> *The NBN fixed wireless and LTSS satellite services can both provide a high quality telephone service.*

We would like to challenge that assumption and suggest that there is sufficient data from a number of sources that would actually justify that, and I'm happy to point to some of those in our presentation. But before we go to more details, I'd like to make our recommendation based on the current situation and the current proposals.

It is our view that until it can be clearly demonstrated that Sky Muster voice services or the mobile networks can deliver at least an equivalent customer experience, along with the equivalent reliability, to the existing USO services that are in place, then the latter, these existing USO services, should remain in place.

So I'll pause there and perhaps ask the Commissioner if there is any questions, or if he'd like some additional statistical or background support of this position.

MR LINDWALL: Thank you very much for that. Could I ask, firstly, are you happy for this to be treated as a submission, and we'll put it on our website then?

MR SMALLWOOD: Yes, I am, correct. And there are two areas of that that are contained in this presentation that I have that have been removed that may be considered commercial in-confidence information that I have taken out.

MR LINDWALL: Okay, so - all right, the version that we've got then.

MR SMALLWOOD: Correct.

MR LINDWALL: And could you send an electronic version?

MR SMALLWOOD: I certainly can.

MR LINDWALL: All right, good. Makes it easier, rather than scanning it in. The other question is - and I just - especially since your organisation is a development commission for the mid-west, I urge you to have a look at the transitioning regional economies study, and certainly be happy if you could talk about that - - -

MR SMALLWOOD: Absolutely.

MR LINDWALL: - - - and maybe put a submission in to that as well.

MR SMALLWOOD: Absolutely. Having said that, I must advise that, given caretaker conventions and also our state government conventions, the individual development commissions are not permitted to make individual submissions to federal inquiries, except as a consensus through the WA Department of Commerce.

MR LINDWALL: Yes, okay. Well, by the time submissions are made, maybe there might be a result in the election and a new government formed.

MR SMALLWOOD: Absolutely. We will certainly have a look at it.

MR LINDWALL: And that study, the final report's in December.

MR SMALLWOOD: Fantastic.

MR LINDWALL: Now, getting back to the topic at hand, I just want to clarify that what we said in the draft report about the approximately 400,000 premises covered by Sky Muster, we also said that - and I note particularly the numbers of hearings I've had, people with concerns about Sky Muster.

So my first question is, do you think that this is just - the problems with Sky Muster that you've - you've laid out as well as other people is a temporary thing? That - because NBN is going around putting the Sky Muster out and setting it up properly, that it's teething issues, and that you would expect it to get better over time? Or are you sceptical of that?

MR SMALLWOOD: I'd like to start from what let's consider from a physics point of view is a best-case scenario, okay? So let's assume that everything with Sky Muster works perfectly, and all the claims that Sky Muster makes come to fruition and everything operates within the bounds of physics. Best possible scenario.

Now, even given all of those scenarios, excluding any potential delays that may occur in the network equipment that's based terrestrially or the network equipment that's in the satellite, taking simply the limitations of the speed of light, which as far as I'm aware no one in the circles that I travel in has any great ideas about how we can improve on that, you still have a scenario where a Sky Muster to Sky Muster telephone call is always going - in every single circumstances is always going to violate these ITU behaviour studies as to what is acceptable from a telephone call perspective.

MR LINDWALL: Latency.

MR SMALLWOOD: From latency alone point of view. Now, once we add what are typically real world additions to those latencies, in most cases, not always, but in most cases and even from what I know about the TC1 packet prioritisation system that NBN is proposing to use on Sky Muster voice calls, you will suggest at least another 50 per cent increase in that latency, and in many cases up to 100 per cent.

So once you've done that, in a typical real-world scenario, you've got - just latency issues alone, notwithstanding all the reliability issues to do with weather impacts et cetera, et cetera, you're going to have a latency that is double what the ITU considers to be acceptable for a telephone call.

So we can go into more detail if you want - - -

MR LINDWALL: No, no, no, no, no.

MR SMALLWOOD: - - - but that's the basic problem. You're not going to change the speed of light.

MR LINDWALL: I understand about geostationary orbits.

MR SMALLWOOD: And if you look at, for example - - -

MR LINDWALL: And I know the speed of light is 300,000 kilometres per second, so I do - - -

MR SMALLWOOD: Let's say, for example, let's go to slide number 33.

MR LINDWALL: Yes.

MR SMALLWOOD: Slide number 33 shows a comparison of various latencies. Now, if we look down to the very left-hand side, that's the situation that we have today. On the current fixed line telephone networks that are delivered by the Telstra USO, this is what people are used to dealing with. It's down in that, you know, mostly sub 20 milliseconds kind of range, and that is also on Telstra's high capacity radio concentrator systems that go out to the most remote parts of Australia. They still manage, in the majority of cases, below 25 milliseconds of latency.

So when I'm speaking to someone in one of the most remote stations in Western Australia, I'll take for example a phone call I had yesterday to Wooleen Station, which sits just outside of the Square Kilometre Array properties, about 200 and - just guessing - 40 kilometres north-east of Geraldton.

The phone call I have with the operators of the station is equally as clear as if someone were sitting in the next room on a direct line connection without even going through a telephone exchange. You cannot even tell that it is going through any network. It is high quality, it works, and it is for the most part generally quite reliable, notwithstanding some issues that we all are aware of with the end of life issues with that equipment.

Now, let's move further. The mobile networks and satellite phones - I want to very clearly differentiate here and make sure that everyone understands, there is a significant difference between a satellite phone and telephone calls transmitted over the Sky Muster satellite.

Satellite phones mostly manage latencies in the sub 100 millisecond range. Why is that?

MR LINDWALL: Because they're low earth orbits.

MR SMALLWOOD: If you look onto the page - let's see, where is that now? It's on the previous page, page number 32. This is an important point to make. On page 32 - I'll hold this up because it's so obvious that everyone can see it, even from the back of the room. If you look at where the satellites that deliver phone service from satphones operate, it's in an orbit around the Earth that is around about 600 to 1,100 kilometres, and this is roughly to scale, by the way. That's the diameter of the Earth. There's Australia in the middle. And those satellites orbit at an orbit that is roughly 10 to 20 per cent of the diameter of the Earth.

On the other hand, the Sky Muster satellite orbit is on an orbit that is 300 per cent of the diameter of the Earth, at 35,786 kilometres. In the best of all scenarios, no matter how you cut it and how little latency exists in the rest of the network, you're going to get a minimum of 119 milliseconds on each one of those legs, and unfortunately, on a Sky Muster to Sky Muster call - we'll go back in that particular case to slide number 28. On a

Sky Muster to Sky Muster call, you've got five legs to transition between when I say hello - I'll hold this up to see if you can see it.

I'm the caller. I say hello. The call goes to the satellite. It then reverts to an Earth station. Now, that Earth station can be anywhere in Australia. It's not your local Earth station, necessarily, so for example, I looked up Wooleen Station, which, as I just spoke about, is 220 kilometres or so north-east of Geraldton. The Earth station that the signals from Wooleen Station come down to are not the Geraldton satellite Earth station. They're in Tasmania. Not sure why, but they're in Tasmania. So if there were weather issues between that satellite and Tasmania, telephone calls at Wooleen Station are going to be disrupted.

The signal then transits the terrestrial network up to 4,500 kilometres, and from what I understand, all the signals must go via the Sydney Earth station, where they are then re-uplinked to the satellite and re-downlinked to the call party, who then hears "Hello" in a minimum, absolute minimum, theoretical minimum, of 492 milliseconds. It cannot get any better than that, unless someone is willing to contest Mr Einstein.

Now - - -

MR LINDWALL: I'm not contesting Albert Einstein.

MR SMALLWOOD: What that results in, if we look at the ITU G.114 standard - this is - again, it's primarily a recommendation for how telephone networks are designed around the world. They have done behavioural research that essentially suggests that as the latency increases, user dissatisfaction increases, where you get to the point of around about 520 milliseconds or so you always get 100 per cent of users dissatisfied.

So with Sky Muster's theoretical minimum latency on a one-direction Sky Muster to Sky Muster call of 492 milliseconds, there is no way to avoid that you're going to get nearly all users dissatisfied, if someone on a Sky Muster satellite has to call someone who may be 20 kilometres down the road on another Sky Muster satellite.

MR LINDWALL: Okay.

MR SMALLWOOD: Now, I might just add one more thing.

MR LINDWALL: Yes.

MR SMALLWOOD: In the real world, this is actual - this is a ping test from a customer's terminal who is on a Sky Muster satellite service, and the theoretical ping is up and back, so it says, "Hello, do you hear me? Yes, I hear you. Okay, how long did it take?" So the theoretical latency on that is 238 milliseconds. So that is 119 times two. But in this particular case, and again this is one-off, I'll acknowledge, this is anecdotal, I haven't done 100 and compared the average amongst them. 564 is what this customer gets typically on a ping test to the satellite.

So in the real world we need to roughly double those figures. I'll pause for a moment.

MR LINDWALL: No, no, that's good. And just for the record, of course, geostationary orbit is above the equator, right?

MR SMALLWOOD: Correct.

MR LINDWALL: Now, the thing that you're talking about here are satellite to satellite communications.

MR SMALLWOOD: Correct.

MR LINDWALL: As in the NBN satellite to NBN satellite.

MR SMALLWOOD: That's correct.

MR LINDWALL: What about NBN satellite to a landline or to something like that?

MR SMALLWOOD: Okay. It's a very good question to ask, and in the very small number of anecdotal circumstances that I have personally participated, and I can't speak for others, I find that if someone on an NBN satellite on a managed VOIP service rings me on a landline, it's slightly awkward, but it's not an unacceptable scenario.

It actually does provide a reasonably okay conversation. It's not certainly not up to the standard of what you'd get on, say, one of the existing landlines that's delivered over the HCRC radio systems that Telstra delivers into the most remote areas today.

MR LINDWALL: I haven't actually personally tried the - I think we might be, next week, the Sky Muster to Sky Muster call.

MR SMALLWOOD: Yes.

MR LINDWALL: But I have done a one - you know, to a landline, and like you, I found it quite all right, I didn't have any problems with that.

MR SMALLWOOD: But again, I think the primary concern beyond the latency is the vulnerability to service issues and the difficulty in remedying those faults when that scenario takes place. And once you're off the line and once that service fails, unless you're a fairly savvy IT skilled person it is a challenging scenario in virtually every circumstance to get that service back online again.

I mean, I've been in the IT telecoms business for more than 25 years. I still struggle with this stuff. I really feel the pain of what folks must go through who don't really understand how this stuff works or how to fix it.

MR LINDWALL: On the examples you gave me of the lady at Horrocks, for example - - -

MR SMALLWOOD: Yes.

MR LINDWALL: - - - where she had been using the interim satellite service, everyone I speak to seems to think that the Sky Muster is a lot better than the ISS, so I hope that she's not thinking that she's going to get worse service.

MR SMALLWOOD: Look, there are some challenging situations in all environments. There may be some issues with the topology where she is located that could cause some issues. I don't know where the orbit is of where the interim satellite was. I know in this particular scenario there were some issues with there being a hill that was slightly above where the satellite dish needed to point, and there may be some reflections off the hill. We don't know at this stage. It's too early to say.

However, they did get the satellite reliably working when the technician left the premise last Tuesday, so that's all we can say.

MR LINDWALL: So maybe it moved or something? Because I understand that it is very important to be pointed exactly with the right size - - -

MR SMALLWOOD: Absolutely. One other thing to point out is that the Ka band satellite which operates in the - it's around about the 25 to 40 gigahertz spectrum, is highly susceptible to any kinds of interference, and it's also important to recognise that in order to get the performance that they've got from those types of satellites, you have to increase the frequency at which they transmit. And the higher the frequency, the more susceptible those signals are to any sort of disruption or weather events or dust or - you know, even bird flocks.

MR LINDWALL: Have you had any experience with the Telstra USO satellite service?

MR SMALLWOOD: I haven't, not personally.

MR LINDWALL: Okay, that's all right. And you understand that in our report we did say there were 400,000 premises within the NBN satellite service, of which 90,000 wouldn't have a good mobile service, so - - -

MR SMALLWOOD: Correct.

MR LINDWALL: - - -do you say - would you say that if you had a good mobile service and the NBN Sky Muster, that would be sufficient? You wouldn't also need to have a landline?

MR SMALLWOOD: That's a difficult one. In particular - and again, I'll go to slide number - let's start with slide number 19. Let's see. Let's see, where are we?

MR LINDWALL: Yes, it's quite red, and - - -

MR SMALLWOOD: Yes, that's right, now - - -

MR LINDWALL: The estimate is that 99.3 per cent of the premises in Australia are covered by the Telstra mobile network, and less than 30 per cent of the geographic area.

MR SMALLWOOD: That's right.

MR LINDWALL: And WA is a large percentage of the 30 per cent, you would say - the 70 per cent that's not covered.

MR SMALLWOOD: What you might be led to believe by looking at this - again, this is not meant to be critical - this service shows essentially where the population of Western Australia live, so you would be right to think, well, there's no point in putting mobile towers up in the middle of the desert where there's no one, and absolutely, that's certainly not something that we would be recommending either.

But let's go to the next page, on page 20, and that's a blow-up of the area that's roughly halfway between Perth and Geraldton, and that shows Telstra's 3G coverage in that area. Now imagine if your role were to determine where USO would apply for voice services. It would be extraordinarily difficult to map out an area that would be permitted to have mobile coverage for USO and define where those boundaries are that would permit a sufficiently reliable service on mobile to replace the existing landlines that can be predicted and always have a dedicated circuit back to the exchange and can provide a reliable service.

With a mobile network, being radio – and again, being a radio technical person from many, many decades ago, radio is difficult. It is always going to be difficult, and it is impacted by a number of things, and it changes. Those patterns are not just static. If there's a heavy load on the mobile network, the signal will shrink to accommodate for the load. If there is a weather condition, there can be an impact. If there is high traffic in one part of the network.

You have got all these sequential points of contention that can determine the level of service that is provided at the end user point of view. So we don't feel that the mobile network is predictable enough to be able to replace the existing USO services.

MR LINDWALL: So given that - and the other factor I think is worth noting is that, however you cut it, the current copper network and digital radio concentrator, which is 70s technology as far as I understand - - -

MR SMALLWOOD: 80s, yes.

MR LINDWALL: - - - are becoming increasingly difficult to maintain - - -

MR SMALLWOOD: Yes.

MR LINDWALL: - - - so ultimately at some point in the future it will have to be replaced with something.

MR SMALLWOOD: Correct.

MR LINDWALL: What would you replace it with?

MR SMALLWOOD: Okay. I cannot make a personal comment on that. I have got a view, but it is not probably appropriate in this forum.

MR LINDWALL: Okay, all right.

MR SMALLWOOD: I have to say, however, though - I mean, this is, by the way, one of the HCRC receiver units at Wooleen Station for example. These have been in place - there was a huge amount of very thoughtful work that went into the design of that system to allow it to do what it does and to continue to work. Even though it is at its sort of end of life, it is still certainly maintainable and it does deliver a very high quality service. Telstra owns the delivery of the USO, and it's really Telstra's role to determine what they would do to replace that system with something equivalent or better should this service prove to be unreliable or unable to provide the service.

But as it stands today, this is a high quality PSTN-grade remote service that goes to the most remote parts of Australia in a way that, as far as I am aware, doesn't exist anywhere else in the world, and to replace that with something that is of a lower grade service that would reduce the customer experience is really not something we should be considering in the revision of the USO.

Again, it's Telstra's call as to what that should be. We've got something now that works - - -

MR LINDWALL: Well, locked in contract, yes.

MR SMALLWOOD: - - - let's not replace it with something that's worse.

MR LINDWALL: Yes. Now, in our Sydney hearings, we heard from a gentleman whose name eludes me right at this instant - - -

MR SMALLWOOD: Would it be Mr Moore, perhaps?

MR LINDWALL: - - - about tethered balloons.

MR SMALLWOOD: No, no.

MR LINDWALL: No. No, it wasn't Mr Moore, it was another gentleman. Have you heard of this technology?

MR SMALLWOOD: Okay, yes. That idea has been around since the 1980s. It was originally introduced by a gentleman by the name of Alexander Haig who was one of the top defence officials in the Reagan government in the USA. They called it, at that stage, Sky Station. Memory still works. And it was abandoned,.

MR LINDWALL: Not - okay, abandoned.

MR SMALLWOOD: It was abandoned for many, many logistical difficulties. I mean, we could be here until midnight tonight and I wouldn't even finish.

MR LINDWALL: No, that's all right, we don't have time for that, so - - -

MR SMALLWOOD: It's complicated. Look, if you're going to go to the extent of what that would take, you may as well just put fibre everywhere.

MR LINDWALL: Okay. Well, finally, did you have any comments you would like to make before we move to the next presentation?

MR SMALLWOOD: Let's just have a quick look through some of the slides that we didn't talk about.

MR LINDWALL: Of course you're able to come back later in the day if you hear something that you'd like to comment or dispute.

MR SMALLWOOD: Sure, yes. I think one very important point to be made is that the existence of the current fixed line USO services are really important to people in regional areas, if for no other reason than it gives them a lifeline to the rest of the world if the satellite service that they're using for broadband fails.

If you don't have that lifeline, the complexity of restoring your service is disruptive to your life and to your business in a very, very big way, and so we need to consider not just what the quality of that service is, but what the impacts would be of removing the existing service.

I might just also point out that on slide number 11, this shows the locations of all of the current areas in Western Australia where fixed line voice services are delivered by Telstra's copper network along with ADSL services.

Now, it doesn't show all of the fixed line services, but it shows fixed line services where ADSL services are available. And you'll note that compared to the previous slide, on number 10, which shows - if you - you'll have to have very good eyesight to see this one, but on this slide here, purple dots indicate where the NBN fixed line and fixed wireless services go, so if you're not in one of those areas where there's a purple dot, you're on Sky Muster.

Now, my rough calculations, looking at that map, would say that's about 90 plus percent or more of people on Sky Muster. However, a lot of those folks that are

designated for Sky Muster have got pretty darn good fixed line services with ADSL at the moment.

And under some of the proposal that we've looked at, most of these folks who are outside the metropolitan regions would eventually lose those fixed line services and be placed on Sky Muster. Amongst those would be all of these communities on page 12, and if you were to go individually to each one of these communities and ask them whether they'd rather keep their existing services or switch over to satellite, if I were a betting man I know where I'd put my money.

So we'll leave it at that.

MR LINDWALL: Okay, and final point on ADSL, of course, ADSL deteriorates over (inaudible).

(The Commissioner's fails at this point.)

MR SMALLWOOD: Correct.

MR LINDWALL: (inaudible)

MR SMALLWOOD: That's correct.

MR LINDWALL: (inaudible) 24 megabits a second (inaudible)

MR SMALLWOOD: Depending on how long the copper is.

MR LINDWALL: And after that it gets down to (inaudible).

MR SMALLWOOD: Yes.

MR LINDWALL: (inaudible). Thank you very much (inaudible) perhaps if you (inaudible) presentation (inaudible).

MR SMALLWOOD: I shall.

MR LINDWALL: (inaudible) So could I now ask Gary Sherry to come forward, please?

(Commission is made aware of microphone failure and adjourns.)

ADJOURNED **[10.03 am]**

RESUMED **[10.06 am]**

MR LINDWALL: Please introduce yourself, Gary, and make a statement as you see fit.

MR SHERRY: Thanks, Paul. My name is Gary Sherry, I'm the CEO of the Shire of Cuballing. The Shire of Cuballing is a small wheat belt shire, we have a population of about 800 to 900 people. We're about 190 kilometres from Perth and our area is about 1200 square kilometres. We have two town sites, two small town sites, of Cuballing and Popanyinning. And then the majority of our shire is agricultural wheat based. Also some intensive animal husbandry businesses, and an increasing number of lifestyle people who are choosing to retire or move to our shire for lifestyle purposes, for that rural lifestyle.

I just wanted to, I suppose my submission is more about how my community telecommunications and communications and where I see my community wanting to or needing to have those communications in the future. So I suppose the first point I would want to make is that we support the extension of the USO to include Internet and mobile phone services. We see our community as using those sources of communication more and more and it is becoming part of our social fabric to some point.

Mobile phones and particularly Internet are becoming a bigger part of education, health, particularly commerce, and the way our local businesses work, our community transactions, because we're slightly remote, our transactions with government. Even our own shire and our relationship with our community is moving more to that electronic, digital communication. So it's just that our community is now seeing these, Internet and mobile communication, as being their standard or their minimum service requirement to interact and the services covered by the USO are increasingly becoming less important in my community.

The Shire of Cuballing does support some sort of national wholesale pricing. We don't see our rural telecommunications market as being anywhere near a perfect market and we're concerned about the services that we're coming to take for granted as becoming more costly for us than perhaps a more populace market. My comments about the Sky Muster service probably more relate to the cost in relation to other services. We're now one of the communities serviced by the NBN fixed wireless service which is a very good service but we have issues with, for us, the Shire of Cuballing, we're unable to get a NBN fixed wireless service in the shire's name.

Apparently Telstra don't, or we can't get that service from Telstra, Telstra don't have an NBN fixed wireless service for a commercial user. They certainly have them for personal home use but not for commercial users, so that is an example of how our market is skewed. We would also mention that, and support, I think, in your draft recommendation 74 about addressing improving the rollout of the mobile black spot and also the NBN coverage in that. We don't see that there's been opportunities, we don't see the opportunities for maximising the service have been always taken.

We would probably suggest that the programs are running the locations and the timeframes of the need to build those structures to comply with the funding program are driving their location and how those structures are put up. I'd just mention a couple of experiences we've had with the NBN and the construction of the two fixed wireless

service in Cuballing and Popanyinning where in our - and we're not technical experts of course, but in our opinion we would have thought that the service was best in the highest part of the landscape. Certainly in Popanyinning that opportunity wasn't taken.

Similarly with the rollout of the mobile black spot program in Popanyinning Telstra chose to build a tower on their land that they owned in the town, which was fine, however that's at the very bottom of the landscape and resulted in a very large tower in the centre of our town. In building that tower Telstra and the program took a very metro-centric attitude to the construction of that tower, whereas - and I say that in that when we took an interest in the location and the scale of the tower there was a presumption that we were being negative about it. We just wanted to maximise the service.

We weren't concerned, there was a presumption by Telstra that we were concerned about radiation and that our community was worried about it and they wanted to reduce the size of the tower, that wasn't our case, we wanted the best possible outcome. And we were willing to work with the programs to make sure that happened. And that could take a point of having the service located on our land, on our structures, we were much more keen about the - we wanted to get the best possible result. And in our opinion that Telstra contact gave us plans in April, they had to have it finished by June, so we didn't get any opportunity to have those discussions about the best site or location.

So we see that there would be opportunities for improving the - we see opportunities for improving Internet and mobile services by at least prescriptive programs and where there is opportunities by taking the opportunities of working with the local communities to make sure those services are best provided. That's pretty much it.

MR LINDWALL: Thanks very much for that, Gary. I just want to distinguish here between fixed wireless that's provided by the NBN and the Telstra tower that we saw which is our mobile phones?

MR SHERRY: Yes.

MR LINDWALL: I couldn't understand when you were saying that the council itself wanted to have fixed wireless service for the NBN service and you weren't able to get it?

MR SHERRY: So that we weren't able to get from Telstra?

MR LINDWALL: Or any other - - -

MR SHERRY: No, we were able to buy it through another provider. But I was using that as an example of the market not being perfect. And one of the largest players who just doesn't have an NBN fixed wireless product for a commercial entity.

MR LINDWALL: It hasn't got the satellite service either - sorry, you don't get any satellite there, it's a commercial decision, I guess, but how many retailers have you seen offering fixed wireless services in your area?

MR SHERRY: There's only two that are actively advertising in our community, so that's iiNet and Activ8, who sell a service through our local post office.

MR LINDWALL: So in the shire what percentage of households do you think would have a Sky Muster service and what percentage would that be fixed wireless service?

MR SHERRY: Look, I'm probably thinking of, most of the population is located around our two towns, so I'm probably thinking somewhere between five and 10 per cent of our 800 people are those people living on farms remotely out of our towns.

MR LINDWALL: They would be on the satellite service?

MR SHERRY: They're on the satellite service.

MR LINDWALL: So if we take the fixed wireless service, have people been generally happy about the service?

MR SHERRY: In general people are very happy with the service. So we have, there were a number of households in our - a lot of households in our communities didn't have access to ADSL so there was a private provider doing another fixed wireless solution that was inferior to NBN. Lots of people have moved across to the NBN service from that inferior service and have found it very good.

MR LINDWALL: And with the Sky Muster, I take it most people would complain somewhere else and not necessarily come to - - -

MR SHERRY: They don't necessarily come to you but at the same time the only concern I'm hearing about it is the price.

MR LINDWALL: Because it's more expensive - - -

MR SHERRY: It's more expensive. And our community want, our farming community who use that service, they want access to Internet as part of their business. And also they're living there so they want that for their family as well.

MR LINDWALL: But do you think they understand that a satellite by nature is a fixed service in the sense that it's got fixed capacity and you can't upgrade a satellite, the only way that you can increase capacity to launch yet another satellite, which is quite expensive of course?

MR SHERRY: I think they do. I think by those people that have Sky Muster I think there's a relatively good understanding of how the service works and that they're fixed to that level. Most of them still see Sky Muster as being better, a better service than what they were on before, but they see its limitations. Although they understand they can't, you can't fix it overnight.

MR LINDWALL: No because it's split between peak and off-peak data allocations. As an example of the amount of people who are using the Internet to interact with state council do you have any comments about say the number of people paying their rates electronically rather than, I don't know, sending the cheque in the mail or something like that?

MR SHERRY: Increasingly people are choosing to use those sort of they pay their rates increasingly by electronic transfer. That's now becoming the norm rather than cash or cheque. Given that we still have a relatively large number of retirees and pensioners in our community that section of our community probably use cash or cheque slightly higher than others. Our farming community and our local businesses probably, I can't think of a farmer who paid their rates by cheque this year. Also we're increasingly using Internet services such as Facebook and our website to put out news and communicate with our communities, SMS as well.

So we have from an emergency services point of view we use SMS a large amount in terms of fire, so we put out warnings about harvest bans during high fire periods. We also use it to communicate with people when roads are closed. We've just had floods this last week so we've been reporting that to our communities through mobile phones, through SMS. We do the same thing through Facebook and other social media as well so that's increasingly becoming how people are finding out about these services that we use.

MR LINDWALL: It's changing your business model.

MR SHERRY: It's changing our business model, yes.

MR LINDWALL: The thing about the mobile phone towers, interestingly, it sounds what you're commenting that Telstra deliberately reduce the power so that it wouldn't have as wide a coverage as it could have. Is that what you're saying?

MR SHERRY: Anecdotally people tell that to me but they were keen to reduce the size of the tower.

MR LINDWALL: Yes.

MR SHERRY: To reduce the level of community concern. There wasn't any community concern. We were wanting if anything to get as big a tower as we possibly could to get as bigger wider coverage as possible. So our community was thinking that rather than there was concerns about radiation or whatever else. So we actually, our community was so in support of that service that we as a shire we cut short the planning process for the tower to fit with Telstra's timeframe for construction by the end of June, rather than - because their suggestion was if we didn't do that they would then shift that grant program to some other community so our community would then miss out that this year. So that wasn't a politically - that's not something that we could have put up with politically, our community wanted the service.

MR LINDWALL: But before that tower was installed how much of an increase in mobile phone coverage would you now see in the shire?

MR SHERRY: Until the Popanyinning mobile phone tower was erected Popanyinning basically had no mobile phone coverage at all. So it wasn't strong enough to carry certainly voice call. So the local post office, the local bed and breakfast in Popanyinning, they had to install the booster service because people would turn up to their businesses, realise there wasn't a mobile service, they couldn't use their mobile Internet, as say a travelling salesman or business people, so they would go somewhere else rather than stay there. So that just became a necessary cost for them to operate. People now are able to use that.

Our shire office in Cuballing, we're on the - we're due to get a black spot tower this year, so by 30 June this year, so our shire office, we maintain a booster, we need that for emergency services and that sort of to run fires, our fire response. We have local business people that come and park their car in our car park so they can take advantage of our booster service, it doesn't cost us anything but we're providing that, that service is available. We've got that service in our local sporting facility because we had an incident where somebody was staying overnight and had a heart attack and they weren't able to contact the emergency services because that part of town didn't carry mobile phone voice call services.

MR LINDWALL: What do you think of the current Perth - I think they've got their own government that provides quite good subsidies for the mobile black spot areas so you wouldn't be aware of whether the money came from WA Government or the federal government?

MR SHERRY: I think our money has come from the WA Government. Certainly the WA National Party are taking responsibility for the decision as part of this in our current state election.

MR LINDWALL: Are there many pay phones in the shire?

MR SHERRY: We have two pay phones, one in Cuballing and one in Popanyinning.

MR LINDWALL: Do you support our recommendation to phase them out?

MR SHERRY: Yes, I've now lived in Cuballing for three years, I've never seen anyone use that mobile phone, Telstra would probably back that up.

MR LINDWALL: You mean the pay phone?

MR SHERRY: The pay phone, yes, sorry. I never seen anyone use it. I don't see that as having value. I reckon there would be opportunity, there could well be another program that could replace that if that was seen as worthwhile.

MR LINDWALL: (inaudible) Bruce, do you have any - sorry, Garry, do you have any final points you'd like to make?

MR SHERRY: No, I think I've covered those pretty well.

MR LINDWALL: All right, thank you.

MR SHERRY: Cheers.

MR LINDWALL: Could I now invite Juliet Grist to come forward here? And then we'll have morning tea after this. Hello. Paul.

MS GRIST: Hi Paul. Juliet, yes. Sorry.

MR LINDWALL: If you could just introduce yourself and say what you wish.

MS GRIST: Thanks, Paul. My name is Juliet Grist, I'm the executive officer of Regional Development Australia Wheatbelt. Regional Development Australia Wheatbelt along with other regional and remote peak bodies and stakeholders view efficient and affordable telecommunications as essential in achieving positive economic development outcomes.

Many, although not all, of the findings of the Productivity Commission as articulated in its draft report are supported by our own regional experience. We also agree with many of the Commission's recommendations contained within the draft report, including the need for a new service framework. Today I'd like to highlight some of those areas where we would encourage further work or further refinements to the Commission's draft recommendations.

Those three areas are baseline or minimum quality, targeted intervention to support thin markets so that affordability is managed, and the provision of basic voice services, whether that's through the public phone system or another mechanism. So first to baseline or minimum quality, we contend that satellite NBN does not meet the minimum or baseline quality requirements for today's world. We agree that the USO is one of a range of measures aimed at ensuring telecommunication services are available, accessible and affordable to cohorts of users that may be high cost and uneconomic to serve.

We draw the Commission's attention to the sad fact that when it comes to small disperse communities in rural Australia the NBN also finds the provision of anything other than a satellite service to be high cost and uneconomic. Consequently these communities will still receive a lesser service after the NBN than their city counterparts receive right now. The change may improve their circumstances but it will not lessen the divide. Further, it may impede their international competitiveness and their ability to partake in the digital economy. Not because the NBN isn't there but because the satellite service does not meet the baseline or minimum quality required of business in these times.

The NBN approach is to minimise the potential impacts of these limitations by stating that only three per cent of Australian customers will have access to satellite services. We are part of that three per cent. In the wheatbelt subregions of central east and south connections to the satellite service are likely to comprise almost three quarters of households in the south and half in the central east. Staying competitive in a business environment is critical and as the business environment becomes more digital so we have to lift our ability to engage with it.

Last time the gross regional product of these two subregions was comprehensibly measured in 2013 it came in at an impressive 2.3 billion, or more than $80,456 per person. These subregions punch well above their weight in their contribution to the Australian economy. Telecommunications investments in these regions should be looked upon as an investment in the future of the whole country. We are heartened by the Commission's acknowledgement that there are questions around the adequacy of the NBN service as a baseline service within the satellite footprint and also by the Commission's efforts to inquire further as to what the baseline measures should be.

We believe that community definitions around what constitutes basic telecommunications enabled functions has moved with the times and ought to be reflected within the USO. Increasingly basic telecommunications in rural and regional areas extends beyond your email inbox to the delivery of health and educational services such as eHealth services and secondary education such as the School of Isolated and Distance Education which services our region, as well as access to universities with study increasingly including online delivery.

Earlier this year the AMA warned that without access to telemedicine and eHealth services people in regional, rural and remote Australia could fall even further behind in terms of access to quality health services. Current satellite services were identified as grossly inadequate for this purpose. NBN officers have confirmed to us that the satellite provides for a maximum speed of 25 megabytes per second with no guaranteed minimum.

Two; targeted interventions to support thin markets so that affordability is managed. Some participants in your inquiry have argued that the relative affordability of services is ultimately a function of where you live and that rural and regional communities need to accept that some things will be more expensive. And of course they are. The thin regional remote telecommunications market of the WA Wheatbelt and other WA agricultural and resource regions will not attract the level of competition or have the profit opportunity for service providers that urban markets will. This is across telecommunications and many other categories of products and services.

The choices, that either the regional user pays a premium which in a thin market is usually significant, as some examples in our written submission show, or the taxpayer and/or urban users subsidise an equitable level of affordable service to regional and remote areas, whether that be through a regulatory framework such as the USO or through direct subsidies. Of course the residents of these thin markets are themselves taxpayers and often do not have access to the services paid for out of taxpayers' funds that are taken for granted in more populated areas.

These families still contribute their share to the tax pool even though they cannot necessarily access the services provided. In 2014 WA's agricultural production was eight billion with the wheatbelt producing five billion. Similarly the value of the WA mineral and petroleum industry was 84.6 billion in 2015/16, which represented 53 per cent of the total national value of the mineral petroleum industry. All of this was generated from regions with an estimated population of 1.7 per cent of the national population. When it comes to telecommunications these regions are receiving a significantly lesser outcome than their urban counterparts despite their importance to the nation.

I personally am encouraged by the talk around the capability of the 5G network which suggests significantly improved quality that will vastly exceed the capability of the NBN satellite service. Perhaps this is the way forward. The principle of support and the philosophy of the universal access of the same standard applies whether or not the mechanism for delivery changes. We agree with the Commission that any further government intervention should harness markets while closely targeting particular user needs.

We do believe, however, that this needs to be supported by policy frameworks and mechanisms that recognise and properly define the rights of the three per cent as being equally entitled to available, accessible, and affordable telecommunications and not left to the whims of the political cycle.

Three, the provision of basic phone services, whether that's through the public phone system or another mechanism. RDAW recommends that concessions be kept in place or implemented for disadvantaged elements of regional remote populations to ensure their access to basic phone services. We agree with the Commission that there are some user groups whose specific needs are not likely to be addressed in the absence of the USO. For people in regional and remote communities who do not have the means to own and use a mobile phone or lack mobile phone coverage such as our community members who may be poor, or where the technological divide exists such as with some elderly, the removal of the public phone network may result in a complete inability to communicate with anyone not in their immediate surrounds.

This is particularly relevant for people experiencing crises. We note that the Commission has considered this in its draft recommendations and considers that these needs could potentially be met by a targeted program of funding. A concept we would agree with in principle but in practice experience suggests that unless there is a mechanism such as the USO to require the provision of such services they are likely to come under the cost per head argument or a change in government priorities with funding inadequate, and where it exists, short term focused. This will leave very vulnerable people even more vulnerable and serve to further marginalise them from society and the support mechanisms that do exist.

For rural and regional Australia this is particularly relevant as face to face services are increasingly replaced by contact centres and online portals. Access to services can be effectively cut off for vulnerable groups because in order to get to them you must first

purchase either a mobile phone or a computer, provide evidence of your fixed evidence in order to connect with a service, and so forth.

So we do support targeted programs to address the needs of vulnerable groups but strongly recommend that the Commission look at ways to ingrain the support within a legislative framework that protects access for all Australians. The simple fact is that efficient, affordable telecommunications are an economic and social necessity in regional and remote areas in the 21st Century. If we were building a national highway we wouldn't say I'm sorry, when this national highway goes through your remote area containing only a few hundred people it will go to a dirt track. We keep the national highway bitumen and of a high quality so that all can connect to using it, goods can move through it, and the national economy is supported.

Telecommunications should be the same. It needs to link our communities with each other and with the goods and services produced. You might argue that a dirt track, or in technological terms, satellite NBN providing voice capability, meets the basic needs. But actually in today's world it doesn't. That's all, thanks.

MR LINDWALL: Could I just follow-up and ask you when you mentioned the satellite doesn't provide a sufficient baseline, are you talking about voice or data or both?

MS GRIST: Both.

MR LINDWALL: So what's the alternative? Well, let's talk about data then, what's the alternative, and (inaudible)?

MS GRIST: Well, what I look there is the baseline measurement in the city is a minimum delivery of 25. That is the maximum possible delivery under satellite. So our maximum, we can't get any better than what is asserted to be the minimum standard for the city. And NBN advised us that there is no guaranteed minimum. So there is no guarantee that once everyone is on, because of course the satellite is up but a lot of our communities aren't yet connected to it because of the delay in getting satellite dishes put on the roofs.

MR LINDWALL: Just on the point about guaranteed minimum?

MS GRIST: Yes.

MR LINDWALL: There's no guaranteed minimum in the cities as well. In fact I have fibre to the node NBN in the moment in my premises in Canberra and I get around about - I wanted to get really fast, but I get around about 12 to 13 megabits per second. So it's well below 25.

MS GRIST: Yes, which is not good, but - - -

MR LINDWALL: There's actually a copper line that connects (inaudible)

MS GRIST: Well, because we don't have that, we only have the advice given us by the NBN, the NBN have advised us in writing that the minimum for fixed wireless to the connection point is 25 megabytes per second, upload I think that is. And that is the maximum that will be received by satellite. So we are only operating on advice because we don't have that ability.

MR LINDWALL: But does that suggest that, do you think, that the eight billion or so that's been spent on the Sky Muster has been totally wasted?

MS GRIST: No, I don't think it is, has been wasted, what I have an objection to is it being considered to be sufficient baseline service. It does not meet the requirements to say that is all that needs to be done. So we do agree with your recommendations that in these small pockets there should be targeted if it's to enable communities to work at ways to improve that so that the baseline can rise. What we're concerned about is if that's left to the market and not ingrained within a framework that there will be no ability for that to happen in real life.

MR LINDWALL: Now the NBN service of course is based upon a wholesale capped price cap and there are a number of retailers within the satellite zone, I think there's up to about 12 retailers?

MS GRIST: Yes. In our written submission to you, I might just have to check with my researcher, I think we looked at 121 different plans?

MR EVANS: Yes. (inaudible)

MS GRIST: We modelled 121 different plans that were delivering within our region to look at the affordability issue, and we've included that in our written submission, and that the bottom line was significantly more expensive than even a quarter of the delivery in urban areas.

MR LINDWALL: But isn't that the - I mean, wouldn't the argument be that the satellite service is by nature fixed user capacity and you can't increase the capacity without launching more satellites?

MS GRIST: I guess it depends what you're arguing. Like the capacity, whether they've got this or that, they're still only guaranteeing a certain level of - well they're not guaranteeing any level of minimum, and a maximum, so that's not going to change whether there's two million people or one million people on it. What we're arguing is it does not meet the baseline requirements. It is insufficient for you to undertake work today. For example, it's been noted as insufficient for rich content. Now if you're doing School of the Air what that means is kids out there cannot access a video to watch that their counterparts can in the curriculum, they would have to have a modified curriculum because they simply cannot access the material that would normally be used to support learnings.

MR LINDWALL: Well we've had testimony from the Isolated Children's Parents Association who said that the Sky Muster was a good service - - -

MS GRIST: Much better.

MR LINDWALL: And they've got 50 gigabytes per student and they thought that was about right. Even if you're not getting 25 megabits per second, and let's say you're only getting 14 megabits per second, you know, high quality definition of video uses about 4 megabits per second at most, maybe, voice call is 150 kilohertz per second, so it's still pretty fast. And is it a bit unreasonable asking for a service that's a minimum of 25 when that would be phenomenally expensive for the Australian taxpayer?

MS GRIST: Well, NBN has advised us that is the minimum service that is being provided to urban. So I take on board your note that that's not your understanding that - - -

MR LINDWALL: Well the government's objectives is that - - -

MS GRIST: That is our written advice from the NBN, yes.

MR LINDWALL: It also depends what package you take.

MS GRIST: For sure.

MR LINDWALL: You could take a 12 megabit package or a 25, and I must point out that the ACCC, the Australian Competition Consumer Commission, has been undertaking a study about how retailers, the retail service providers, advertise their services. And different retailers have different speed throughputs because of the capacity they've got. So it's more than just the NBN issue, it's the issue of retailers.

MS GRIST: Absolutely. And as I said there, like I'm personally excited by the possibility of the 5G network. By the time our NBN is rolled out I think we've got another three years before we're rolled out in our area, and that includes installation of satellite dishes so that everybody can access it, by the time that's all rolled out well the 5G network may be out. And in fact we may say well that's great, we'd rather invest in mobile, we have quite good mobile coverage across our area. But I don't know enough about it. But maybe that's the solution, and that's - - -

MR LINDWALL: Well it will be for some areas but not necessarily - - -

MS GRIST: For everyone.

MR LINDWALL: Not for everyone. I mean 5G, the technology is very small cell coverage at a much higher frequency which means that the coverage is not as broad as lower frequencies so in general the people I would speak to would say that for very remote areas low frequencies are good because they can give you much longer coverage between towers.

MS GRIST: More distance, yes.

MR LINDWALL: But the 5G which is very high throughput megahertz per second and a gigabit a second or more would require very small cell sizes so it would be interesting to see how it works out.

MS GRIST: Yes, but that to me just reconfirms our point that there should be an acknowledgment there's a minimum level of service requirement without necessarily stating the mechanism that needs to provide that. And these small and remote communities should have some discretion to work out amongst all the technology that is available, given that it's still rapidly changing, what works best for us as a community. A lot of these areas the communities are investing their own money in these solutions but at the moment the way the system works you can't say well actually we'll forego the NBN and that money that would have been spent on us we will actually prefer to get this higher quality service that we will co-invest in. There's not that option available.

So we will encourage the Commission to look at setting a framework that has a legislative base level that is higher than the base level provided by the NBN satellite service. But again we would agree with the Commission's recommendations that small communities who are in that three per cent footprint should be able to have targeted mechanisms. But we would also encourage that those targeted mechanisms to allow the communities to have some say in what those are because a lot of them are co-investing, and we have communities in our own region who are investing all of their own money in a solution because the NBN satellite is inadequate and they're not able to in any way share in the money that would have been spent by the NBN in their community to redirect it to co-invest into an alternate high quality service.

MR LINDWALL: Are you sure that people who are dissatisfied with the NBN Sky Muster are not talking about the ISS, the interim satellite service?

MS GRIST: No, no, the interim satellite service people are very dissatisfied with. It is true to say that because we don't have all of our area actually activating on Sky Muster that we have limited experience with it so people are going off the technical requirements of what it offers and saying that is not enough along with their experience of the interim satellite, which again had no guaranteed minimum with NBN advising us there is no guaranteed minimum under the satellite either, so it is possible that when everybody uploads to it, because of course not everyone is on it yet, that the service does in fact drop back.

MR LINDWALL: Although the other argument with that is it is still being rolled out and there are some teething problems and some of the reliability issues should be temporary.

MS GRIST: Yes, we have not had that feedback from the NBN. Our feedback when we met directly with Bill Morrow was that if it becomes an issue they will just launch another satellite. But we have some scepticism over that sort of approach because we

have direct experience of the interim satellite when of course all these promises were made before that as well and then all undone in the rollouts. So, yes, you're quite right, a lot of our feedback on the inadequacy of the satellite NBN is based on what it can actually do rather than - we are surveying the entire region but that takes some many weeks to undertake.

MR LINDWALL: I take all your points about the importance of technology and that but the thing that your complaints about you having guaranteed minimum of 25 megabits that's been unique. People have criticised to this inquiry about unreliability or about the use of satellite for voice calls and so forth, but I don't think anyone else has said that we make it mandatory about the minimum of 25 megabits a second - - -

MS GRIST: Well whether it's 25 or not our argument is equal, it should be our minimum should be the same minimum as is experienced by urban counterparts, a regulated minimum.

MR LINDWALL: But there is no - I want to be a sort of devil's advocate here, because everything comes with a cost.

MS GRIST: Yes, but that's why we argue that it should be viewed an investment not a cost.

MR LINDWALL: But then you don't get the same access to hospitals, the roads are not all the way - - -

MS GRIST: And this is yet another example. It doesn't make it right.

MR LINDWALL: But everything is a balanced cost and benefits surely?

MS GRIST: Yes, but I'm not saying to you that we should require the NBN to offer that. What I'm saying is what we don't want you to do is to say is the NBN is an adequate service, a satellite service. Communities don't think it is. Communities should be able to have some discretion on how they resolve that so that they can provide an equal service to their residents. At the moment they don't have that unless they provide 100 per cent of the capital themselves. So they make other choices.

There may be other better technologies that they want to enlist to be able to provide that equal service. Particularly in light of the fact that NBN, according to the NBN, was only ever intended for households but actually these regional people are business people. We are producing a huge amount of business output out there and a huge contribution to the economy. And the businesses are only able to access household Internet. It is just not adequate.

MR LINDWALL: Have you actually spoken to NBN about this, because they do provide business services?

MS GRIST: I've only spoken to Mr Morrow and he says that it's never intended as that, it's intended as a household service.

MR LINDWALL: Any final comments then Juliet?

MS GRIST: No, I don't think so. This is our third submission to you for this inquiry so probably between it all we've covered all our opinion. Our public phones, we really - sorry, I just want to - - -

MR LINDWALL: The public phones, yes?

MS GRIST: Because it has come up. In our role we spend a lot of time trying to make sure our disadvantaged are serviced. The point I want to make around this is our disadvantaged are the people who can't usually access Internet or can't usually access mobile phones when they're in crisis. Almost all federal services are moving to online only.

MR LINDWALL: Yes.

MS GRIST: If you don't have a call centre or you have online and you don't have access to some form of communication method whatever that might be for the disadvantaged you effectively lock them out of the system. We have done, we've put it in our submissions already to you, but we have done surveys looking at disadvantaged households and how many are connected. And it's less than half. So even though they may not be used very often when people are in crisis they're a necessary connection.

MR LINDWALL: The payphones?

MS GRIST: Yes, we've said they're not necessarily payphones but a communication mechanism that allows people to go and put their 50 cents in or whatever. At the moment you can't use Internet or phone unless you have the equipment and you have a fixed address and you can have a plan. At the moment the mobile phone is the only mechanism that allows you to go and spend 50 cents and make a connection, everything else requires an upfront capital cost.

MR LINDWALL: You mean the payphone?

MS GRIST: The payphone does. So whether it's a payphone that continues or some other local support mechanism that allows access to the disadvantaged, I think it's very important that we if we're removing infrastructure really remember that that infrastructure is actually servicing disadvantaged community that do not have access to these other things all of the time, particularly in crisis.

MR LINDWALL: That's a good point but in the case of payphones usage has dropped precipitously and it does cost quite a bit of money to - - -

MS GRIST: Perhaps payphones isn't the right mechanism, perhaps what it is - - -

MR LINDWALL: The mobile phones, people can use a mobile - for example, a survey in Sydney showed that over 90 per cent of homeless people had a mobile phone that they used. It's a pretty high - - -

MS GRIST: But we would argue for the 10 per cent that don't, yes. So it's no problem if people have the service, it's fine, but how do you manage the 10 per cent that don't? Or in our case, the more than 50 per cent that aren't connected. It's how do you - maybe in 20 years' time it will be a different conversation but at present the community has not moved to the fact that there is community support. My son locks himself out of the house and he goes down to the library to use the Internet to contact me, he doesn't have a library card, he can't message me, he can't contact me, he has to wait until I come home to unlock the house. And a homeless person or a disadvantaged, that's their everyday life.

MR LINDWALL: Well thank you, Juliet. And I think it's time to have a break, if everyone wants to have morning tea.

ADJOURNED **[10.51 am]**

RESUMED **[11.06 am]**

MR LINDWALL: Make some submissions, Martin.

MR ALDRIDGE: Thanks.

MR LINDWALL: So just introduce yourself and say what you wish.

MR ALDRIDGE: Yes. Thank you, Commissioner, and thank you for the opportunity to present at this public hearing today, and for the Commission bringing the public hearing to Western Australia, which I think is important. My name's Martin Aldridge. I'm the member for the agricultural region and I'm here in that capacity.

Along with health and education, it's my view that telecommunications is the other top three issue affecting many of my constituents in regional Western Australia. The submission that I did make, before attending this hearing, outlines the electorate that I represent, which is some 204,000 square kilometres, comparable to the size of Victoria, some 100,000 electors and 60 local government authorities, to give some context to that part of Western Australia.

I'd argue that in today's world, telecommunications is as essential as other critical infrastructure, such as power and water. Many of the things that we do in everyday life, we cannot live without access to good telecommunications. Some of the challenges that I'm regularly faced with by people living in my electorate and their availability and access to telecommunications, include access to emergency services, and that could be

simply their ability to call for assistance when that is needed, or emergency services themselves operating within regional or remote environments with many of them moving towards computer-aided dispatch and digital radio networks, requiring telecommunication networks to operate.

Reliability for business systems, some examples include small businesses that are unreliably able to access EFTPOS facilities to make basic transactions, band width for medical practices to access cloud-based technology. Obviously, in an electorate with sparse population and small communities, we often see, in particular, GPs working across practices and across towns. That is certainly one of the issues that has been raised with me during my term, in relation to their ability to access technology within their practice.

Agricultural businesses being unable to adequately download software and access other marketing tools. The deployment of education and health technology is a really important one.

Certainly, from my perspective, what we've tried to drive in regional Western Australia, is a change in the way we deliver services, particularly government services. Rather than throwing money at the same old problem to deliver it the same old way, we're trying to deliver, particularly some of those core services, where possible with technology or, at least, with reform. Sometimes that can be difficult.

One example of that is Western Australia is really leading Australia, and in fact internationally, in terms of the deployment of emergency tele-health services. Many of our very small nursing posts and country hospitals are now connected to an emergency tele-health network, which gives them access to an emergency medicine physician based in Perth, but indeed they could be based anywhere in the world, to provide that type of emergency medical expertise in small hospitals, where you might not see significant emergencies or trauma regularly.

In one town north of Perth, Lancelin, where we have a remote area nursing post run by Silver Chain, I'm told that deploying the band width to the medical centre there to support emergency telehealth, costs in the order of $100,000, and that wasn't including the technology itself.

Some of the previous presenters today have talked about small towns and fixed wireless versus satellite technology deployment under NBN, and it's something that I do want to talk about this morning. My understanding is that, originally, under the, I guess, version one of NBN, we were expecting many of these small, particularly wheat-belt, towns in my electorate to be connected under the fixed wireless technology rollout. We're now seeing a greater number of them move to satellite connections.

My view on that is that was largely done to reduce the costs associated with the NBN build because, obviously, NBN had some costs associated with the deployment of the satellites and, the more customers from small communities that could be moved onto fixed satellite, would overall reduce the cost of deployment of the NBN program. These are in communities, if I can just name a few: Bruce Rock, with a possible 579 connections; Corrigin, 544 connections; Quairading, 462 connections; Morawa, 425

connections, just to name a few of the larger ones. So they aren't, what I would consider, really small communities. They are towns of reasonable size and reasonable number of connections that will be connected to the satellite Sky Muster service.

One of the things that I don't think is recognised, in the shift between fixed wireless and satellite technology under the NBN, is the costs of connection, not to the customer, but the cost of deploying the technology to the household or to the connection. I'm advised that fixed wireless technology costs about $2,000 to deploy, $8,000 in comparison for Sky Muster satellite. A greater cost to NBN to connect those premises but, I guess, overall potentially a lesser cost in terms of not having to deploy a fixed wireless technology solution to those towns.

I am, fortunately, a fixed wireless customer. I live in a town about 85 kilometres north of Perth, recently connected to the NBN fixed wireless network. Initially, my experience, I receive 10 megabit per second service which, in my view, was more than adequate for what I needed. In the few months since I've connected, that service has deteriorated to some two megabits, and hasn't improved since. I'm told that the aspects of the NBN fixed wireless network are being affected by Spectrum interference, particularly around the mix between rural and urban environments where the ACMA have issued licences for Spectrum which might be conflicting on the boundaries of those Spectrum licences.

I agree with some of the previous presenters this morning, that we must ensure, particularly if we're looking at a future without USO and a move away from Telstra's copper network, NBN will provide a superior service to what we currently have available in our community, especially in relation to those satellite services. We've had some discussion this morning about the ability to transmit voice over satellite.

I think that there is definitely a role for government to continue to have policy and maybe even legislative framework to deal with market failure. That's probably going to be more prevalent in a Western Australian context where we have probably the most concentrated population in our urban areas of Perth and, as the largest State in Australia, have populations scattered from the very northern to the very southern parts of our state.

The draft report of the Commission recognises the increasing affordability of fixed line and mobile services over time. I think it's important to note that many people in regional Western Australia still rely on mobile data as their primary data source, and that continues to be, although improving, high costs in comparison to other options. Small local governments in my electorate, relying on mobile data, are paying in the order of $10,000 a month for their connections.

In terms of funding and the recommendation from the Commission about phasing out the USO over time, the telecommunications industry, and ultimately consumers, have contributed to the industry levy in different forms for some time. I think that's largely accepted, or not known by consumers that a part of their communication cost is in relation to the industry levy. I hold the view that a levy based funding model should be retained in preference to a government funding model, largely driven by budget sources.

I think there is great risk to regional consumers of having a politically driven or a budget driven investment by governments in relation to dealing with market failure of telecommunication networks. I think that this issue is as important, as I said, as maintaining water or power supplies to our communities and should be something that has a level of certainty and guarantee about it. Budget funding probably presents greater capacity, but I think it also presents greater risks.

A revised USO, in my view, would have regard for the NBN rollout and its capacity to deliver data and voice services. I note there were some submissions made to the Commission in relation to voice over Sky Muster, and I think Telstra made some observations in their submission about their experience with voice over their satellite service and whether or not the Sky Muster service could deliver, if optimised, a voice over satellite service. I don't come from a technological background. My job is to know about two per cent of every issue. So I guess I'll leave that to the technical experts. But it is something that I think really does need serious consideration in terms of this inquiry in relation to the USO.

I agree that there should be a minimum service standard, for voice and data. I guess there'll be some speculation as to what that should be. But I think there does need to be some guarantee to, particularly, regional consumers, that they will be not worse off under a phasing out of a USO or a reformed USO arrangement.

As I said, I think the levy funding is probably the best way to deal with market failure in remote and regional Australia. I think, at the moment, we see a greater number of fixed line deployment under NBN to, particularly, the urban areas and maybe our larger regional cities which, I would argue, are probably more likely to be your commercial, or close to commercial markets, which are probably the ones that were cross-subsidising those thinner markets in the regions. That's where my greatest concern lies, in terms of delivery of a minimum or a baseline service to those consumers. Thank you.

MR LINDWALL: Thank you. That's great. On the fixed wireless, and since you've got it at home, have you used it for voice calling?

MR ALDRIDGE: No. I haven't tried it. My plan comes with a VoIP service. When I made the connection, it actually took some time to convince my retailer that I was able to retain my copper service from Telstra, because they insisted on me shutting it off.

MR LINDWALL: Yes.

MR ALDRIDGE: It probably delayed my connection process significantly, while the retailer went through the process of understanding fixed wireless. I think the concern I relayed to NBN through that process is, perhaps other consumers may not have persisted with that process because of the challenges that I faced in terms of retaining my copper line to my home whilst gaining fixed wireless for my data. When I connected to my fixed wireless data, I had to agree over the phone to some lengthy disclaimer by the retailer

about what the voice service could or couldn't be relied upon to do. I think I had to waive my rights under - - -

MR LINDWALL: The consumer service guarantee?

MR ALDRIDGE: Yes, to receive that service, which I thought was interesting given the retailer was insisting on me shutting off my Telstra provided copper service. I haven't tried the VoIP service. The reason why I do currently have a copper line still connected to my home, which I haven't had for some years, is in relation to certain security equipment that is in my home that can't be guaranteed connectivity by the NBN VoIP services.

MR LINDWALL: There's a company that we met in Melbourne that does a lot of testing of all sorts of services, including EFTPOS machines and so on and security services, about their ability to work with different types of technologies. I heard that fixed wireless should work quite well with security, but maybe I'm wrong.

MR ALDRIDGE: Yes, I haven't tried it yet. I guess my experience, at a previous time, with using VoIP over ADSL was very unsatisfactory, so I wasn't rushing back there.

MR LINDWALL: I think our experience, and Telstra's testimony also and its submission, that voice over fixed wireless is a very good service and the same with fixed line, of course. The area that is most of concern is voice over Sky Muster.

MR ALDRIDGE: Yes.

MR LINDWALL: For the reasons that have been outlined before.

MR ALDRIDGE: Yes.

MR LINDWALL: I'm surprised about the two megabits a second. I mean, fixed wireless is supposed to have - you'd be able to buy up to 50 megabits a second. It may be partly to do with this, as you say, interference. Although even then, it's highly beamed into the location. Or it may be your retailer, I'm not sure. The contention ratios can be quite different. When you get a low speed, it's not necessarily the NBN. It can often be the retailer not providing enough, buying enough, CBC capacity for example. Anyway, that's just an aside.

I accept, and there's no doubt, as you read in our reports that technology and dealing with governments, increasingly digitally, is important and vital to today's society. I met Martin Laverty, of the Royal Flying Doctor Service. He gave me an example, which I thought was a great example, where there's a capacity to register a ECG device on the back of a mobile phone.

So he can have someone, say, with a heart condition in a remote or regional area, and if they get some pain they can use the sensor and it immediately detects if, say, it's an angina attack versus a cardiac arrest. That way they can say, if it's a cardiac arrest they,

of course, send the doctor on the plane straight away. If it's angina, they're able to take the nitro-glycerine medicine. But that was a great example of where technology is able to optimise and get a better outcome than before we had that type of data.

Do you get many people from your constituents, talking about Sky Muster and its service and their concerns about how it's been rolled out?

MR ALDRIDGE: Not a lot. I generally try and solicit information from people that I meet that have changed. Generally, the response I get is satisfaction from the new Sky Muster service, in comparison to the interim satellite solution. But, I think, the caution that I put in that is almost universally people express to me concern about what the satellite service will look like once 400,000 customers connect to it.

MR LINDWALL: Yes. 400,000 premises, yes. This is the issue, isn't it, about the satellite is a residual, if you like, and the more people that are on fixed wireless or fixed line, the less demand on the satellite service. Your point, I think, is reasonable about as it was being rolled out that more people who would've been on fixed wireless that are now going onto satellite, well that increases the demand on the satellite. But it's up to NBN to balance those costs and benefits. I'm sure it is the case that the installation at the home of the satellite, is going to be more expensive than the fixed wireless. But they must have had a calculus about the cost overall. I don't know. The capacity of fixed wireless is, effectively, unlimited compared to satellite.

MR ALDRIDGE: Yes. It's a point that I've put to NBN with respect to their Technology Choice Program. We have a number of these communities, some of them that I mentioned, that are destined for satellite. They aren't, what I would consider to be, small communities. A community with connections of 500 premises is not small in my mind, in comparison to my electorate.

MR LINDWALL: Exactly.

MR ALDRIDGE: The question that I have put to NBN was that if you're exercising some sort of a co-investment through the Technology Choice Program, how did they model the $8000 connection versus the $2000 connection in terms of their capital contribution to a, say, fixed wireless network?

MR LINDWALL: Yes, exactly.

MR ALDRIDGE: I haven't quite got a clear answer on that yet.

MR LINDWALL: It would be interesting. I think NBN should've surveyed, if there's a community of 500-odd people, they could ask, "Are you willing to stump up a little bit of money, and we'll get you a better service", or something and maybe that might've got over the hurdle. But I'm not sure that's happening at all.

MR ALDRIDGE: Yes. I think there are communities that are putting in requests under the Technology Choice Program. My view of that to date is, it's a bit like asking Western

Power how much it would cost to connect your new house on the farm to power. They generally give you a quote which is that unreasonable, you don't come back again. It's so ballpark and desktop that it generally scares off anybody that might be considering it.

In terms of fixed wireless, I've heard of communities saying it's about $1 million a tower, in terms of the quotes that are provided. Whereas, I talk to others in the industry and also, I look at some of the planning applications made by NBN for their fixed wireless network, and it's somewhere in the order of probably 20 to 25 per cent of that cost.

MR LINDWALL: It is. $1 million is ridiculously high, yes. The Mobile Black Spot Program, have you got any comments about how it's been rolled out and if you support it? And, if you do support it, how it could be improved even?

MR ALDRIDGE: We support it. The State of Western Australia has invested, since 2008, initially through the Regional Mobile Communications Project. That was a program that predated the Mobile Black Spot Program federally, which saw a partnership between Telstra and the State of Western Australia through Royalties for Regions.

MR LINDWALL: Yes.

MR ALDRIDGE: That's been extended into the Regional Telecommunications Project at two stages of the Regional Telecommunications Project which, I think, has delivered or will deliver 344 new mobile base stations, predominantly with Telstra. I think, where we are wanting to progress is recognising that mobile phone towers are essential in terms of people on the move, mobile accessibility and, in some cases, mobile data. But there are others that have a different data need which aren't going to be met by mobile phone tower programs alone.

Recently, the State of Western Australia announced a $22 million fund through Royalties for Regions, particularly targeted at agriculture and how it can improve or innovate, in the space of technology provision to the agricultural sector. I think we are, rather than government having all of the answers, we're actually looking to industry and innovation to, perhaps, deliver some of those solutions.

In talking about the NBN Technology Choice Program, there are also lots of other private sector players that are looking at developing retail, largely, fixed wireless networks. I guess, the upside to it is, that could potentially drive some competition in those markets.

But also I'm a little bit concerned, from a government policy perspective, if we were to be investing in those networks, having some assurance around their model to make sure that it's sustainable and reliable in terms of the service provider, because Western Australia does have a history of failed networks. You've only got to drive through some of the small towns to see some of the old infrastructure still sitting on the roofs from previous companies that have had a go in this space. Obviously, that was some time ago.

But NBN, I guess, presents, perhaps not the least cost option, but an option which is government-backed won't fail, but still unclear on how we resolve, particularly, large portions of my electorate which won't be accessing any technology option other than satellite.

MR LINDWALL: Do you have any comments on the exposure drafts of the statutory infrastructure provision legislation that the Federal Government has put out for comment? That's to do with effectively, not entirely but partly, making all that look like a wholesale guarantee for NBN.

MR ALDRIDGE: No. No, I haven't seen them.

MR LINDWALL: Have you also seen the regional broadband levy proposal? In the city areas, we have competing wholesale provision of course, in Sydney and Melbourne and so forth.

MR ALDRIDGE: Yes. Yes.

MR LINDWALL: Some people are saying they're cherry picking obviously where there's a lot of revenue source and this would help fund NBN to provide services in the regional areas, is that something - - -

MR ALDRIDGE: Yes. I think that, generally speaking, most of the people that I talk to and interact on this issue are more concerned about coverage than competition. That's certainly the point that I've made to the ACCC in terms of their inquiry into domestic declared roaming. I think most people who can afford to pay for the services will, as long as they have a decent service and a reliability of service. I think, certainly under our mobile phone tower program, we've come under pressure to fund more Optus and Vodafone infrastructure in regional Western Australia to promote competition.

MR LINDWALL: Yes, yes.

MR ALDRIDGE: Whereas the great challenge that I have in my electorate is actually having continuity of service and highway coverage and the like, which I think is a great and more pressing priority than them duplicating networks by investing in competing infrastructure.

MR LINDWALL: That's a good point. The other thing is, I think it's an observation that I've made in this inquiry, is that data use is highly skewed or asymmetric. 50 per cent of the data in the world being used is generated by Netflix and YouTube combined. They're some very heavy users of data and that's fine. But quite a few people in the cities now just have mobile phone contracts and, whilst the data is more expensive, they obviously don't use it terribly much so they find that better than having an NBN contract plus a mobile contract.

MR ALDRIDGE: Yes.

MR LINDWALL: But I'm surprised that your councils that you're talking about, with the bills of $10,000 a month, why aren't they using the NBN satellite service or something like that, where the data rates would be quite a lot less than that?

MR ALDRIDGE: Yes. I don't know the answer. Perhaps they are progressing to satellite options or there's some limitations perhaps. Some limitations. But they were towns that don't have ADSL connections. They don't have ADSL exchanges.

MR LINDWALL: Yes. Yes.

MR ALDRIDGE: Up until recently, they didn't even have mobile phone coverage. So they had mobile phone coverage as a result of the joint investment by the State and Federal governments and industry and they don't have, really, other alternatives that deliver a better service. I think we've also seen some of the challenges of the deployment of NBN infrastructure and the impact that that's having on ADSL technology. I completely understand Telstra's reluctance to expand or invest in ADSL infrastructure with such an uncertain future in some places.

MR LINDWALL: Yes.

MR ALDRIDGE: So particularly larger regional centres, even small towns, that have constrained ADSL capacity pending, perhaps, fixed wireless deployment by the NBN which still could be some months or years off.

MR LINDWALL: Finally, I think, it's come out in a few of the hearings that a lot of areas have been crossed by fibre optic which, the claim is that it's being under-used. For example, fibre optic running up to a mining site or something and it crosses past some towns and it could be used, theoretically.

MR ALDRIDGE: Yes. Yes.

MR LINDWALL: I mean, what do you think about that? Do you know if the WA government has been looking at, say, doing a stock take of the fibre optic coverage and could it be better exploited than it currently is?

MR ALDRIDGE: Yes. I'm not sure what the state government has done in that regard, but I've certainly had several conversations with that view in mind, that even once you start to scratch the surface, you even find State government agencies that own fibre networks with capacity, which aren't that widely known, then obviously, understanding the access or the potential access that could be provided to those fibre networks.

I have a view that the State certainly could play a role in terms of determining the fibre network that we have and its capacity and its accessibility, but also, potentially, developing a blueprint into the future that might help shape future state and maybe Federal Government investment in dealing with some of the areas which NBN aren't going to service well, in my view.

Obviously, I think, there's some opportunity through the inquiry into the USO to, perhaps, shift the USO towards more modern technology choices than perhaps traditional fixed line services, but respecting that fixed line services will probably remain in some places as the preferred option. But, I guess, having regard for how the USO could, perhaps, deliver better outcomes using different technologies and maybe through different services providers.

MR LINDWALL: Yes, yes.

MR ALDRIDGE: In some cases, it could be NBN. In some cases, it could be existing Telstra infrastructure. In some cases, it could be new private investment into some markets. I think that's where there's some great opportunity in terms of reforming the USO, particularly with the significant decrease in fixed line services and the shift away from them where there are better technologies available.

MR LINDWALL: While being technologically neutral, of course.

MR ALDRIDGE: Yes.

MR LINDWALL: Martin, thank you very much. Did you have any final comments you'd like to make?

MR ALDRIDGE: No, thanks.

MR LINDWALL: Thank you. I much appreciate you coming here today. Could I invite Andrew Mangano? Hello. If you could just introduce yourself for the record?

MR MANGANO: Hello, everyone. My name is Andrew Mangano. I'm a professional engineer in 31 years of telecoms experience. Just a brief introduction about me and my company. My company is called Great Northern Telecommunications and we specialise in telecommunications network planning, design, construction, operations, in Western Australia. I was responsible, myself personally as a Telstra employee, for all the high cost rural and remote area service connections from 1991 to 2000, that's including managing individual customers right up to projects, yes, like optic fibre projects.

Background. Telstra is the current monopoly supplier of USO services. Most USO services in WA are on copper, but there's quite a few on two channel radio, HDRC, USO sat, and some are on optical fibre, particularly large Aboriginal communities.

Just a little bit of an example, this is back in '94 when I was in that job, we had a DRCS up north of Broome. It was highly overloaded. It'd only been there seven years. Similar to the Sky Muster situation, totally overcooked. Long and short, we put an optic fibre in 1994. We picked up Beagle Bay, Lombadina, One Arm Point, Signet Bay, put them on fibre. Twenty-two years later, still on fibre, still doing good job. Technologies on the ends have changed, but they've even got mobile coverage, as a result of it, they would not have got otherwise. That fibre is going to - it'll be there for another lifetime or two.

Rural copper and two channel radio and HCRC are all at end of life. It's well acknowledged that they're well past end of life, in fact. Mobile covered is highly variable, as has been highlighted by just about everybody. Highly variable. You cannot guarantee. Today you've got coverage in one place and then next day maybe not, because someone else is doing something else close to the town and cooking the network. You can't rely on it. You certainly couldn't rely on it as a data medium. Voice maybe, but not data, not unless you've got the base within cooee of your house.

NBN satellite, as everyone's just see, latency is shocking. Weather has a direct affect to the data. As soon as it starts raining, the data speed slows and slows and slows and slows till it stops. It basically has an algorithm that looks at the fading, the radio signal fade margin, and drops the data speed accordingly until it gets to a point where it just says, "Okay, I can't send any more data". I don't know what the hell NBN were thinking when they put a station in Geeveston, Tasmania, of all places, a high rainfall environment, and expect it to work reliability. It rains there, I think, like 270 days a year and they put a station there. That is where Wooleen is hanging off. It's not the only one. There's quite a few spot beams off that. I don't know what they were thinking when they did that. It'll need to be perfectly fine weather. It's raining cats and dogs at Geeveston and that's it, no service.

The other thing that also should be noted, is the NBN satellites have a finite life. In 15 years, they're cooked. They'll be crashing and burning out of orbit. They've got to be replaced and that's hundreds of millions of dollars that's going to have to be outlaid to put those two knew satellites in time for that to happen. Very similar to the DRCS, you cannot overload these things. They have finite resources.

You've got a negligible situation where the voice traffic is pretty well flattened out across the medium, but data traffic continues to grow and this is the problem. Data traffic will probably flatten out one day, but it's certainly not at this point in time. It's continuing to grow. Also, because of that, people with Netflix and all the other things that are happening, so you need higher data throughput as well. The minimum baseline certainly isn't metered, whether it's 25 megabits is another question. But four megabits, as you alluded to earlier, it probably will be at least a start as far as the baseline goes. We need to have a minimum floor level.

What should the USO really be? Certainly, not affected by weather or radio path issues which affect availability. It should not use too much power because, in remote areas, power is key. If you've got to have good service, you've got to have a battery backup. When we were in Telstra, we used to put batteries in our - an example, they've got a battery in the box, bottom of the box.

If you're chewing up anything up to 70 watts with an NBN satellite service, you've got to have a massive battery to give you a decent reserve, which is not great. Whereas all the other technologies, even radio, generally, doesn't need that much power. But, obviously, some technologies less than others. It's got to have an acceptable latency for voice to work properly.

Even that example, Rob mentioned earlier about Wooleen, when I was on the other end of the conversation, I found it hard with a one-way satellite hop. I, personally, found that I had to pause to stop myself talking over him when he was using it. This is, mind you, using Skype, I admit that, but it was still as a one-way satellite conversation. Forget having a two-satellite conversation. It would just be a disaster. It would be like talking on a two-way, "Yes, over", sort of thing, before you start talking and the next person starts talking.

We need, it's an absolutely essentiality, and this is where we've got to look further forward than just this immediate, you know, next electoral cycle, a long term, long lifespan solution, that provides voice and data services that are scalable, that means they can grow for the future, and provides equivalent and universal service. "Equivalent" is the key word here. "Equivalent" means the same as the metro area. Just like you get your 240 volt power, or full 15 volt power from Western Power, the same power that delivers to Martin's house in Gin Gin, delivers to me. Same voltage, same everything.

Technology options to deliver the USO. Copper. Yes, copper's great. It's carried voice for many, many years. Many, many years. But it's no good for data over long distances. It's okay for short distances, like VDSL, or fibre to the node. Short distance is fine. A kilometre, maybe two kilometres. ADSL four, five kilometres. But after, you start talking about repeaters. Repeaters cost money. They fail. Then you've got the lightning issue, which I haven't even mentioned here. There's a lightning issue. Once you get further out, you start getting lightning issues. More likely than not, you're getting smashed by lightning, especially in tropical areas.

Mobile. As I mentioned earlier, terrain issues, Spectrum limitations, limited coverage per cell, prone to congestion at times. Radio, fixed radio that is, like fixed wireless. Terrain issues, trees, Spectrum limitations. The ACMA is constantly changing the Spectrum things that costs the carriers piles of money to have to remove, to change their frequency bands. Telstra is paying a fortune at the moment to shift these exchanges that were on a 1.5, 1.8 gigahertz bands to 11 gigs and others. They're the ones that are going to be thrown out when the NBN comes, unless we keep the voice USO.

Optical fibre. A few technical limitations, but expensive to deploy. Not the actual cable, it's the trenching that's the killer there. Optical fibre is preferred and is already being used by the NBN. But how can we deliver it to every rural customer in Australia, in fact every customer in Australia, at a reasonable cost? This is the question that can be answered, and it's been done before.

It's called PPE. Partly privately erected lines. PPE, basically was what farmers had before they got the underground copper and in some places, even HDRC. Just for the benefit of everybody who hasn't got this in front of them, PPE lines were introduced to extend services to rural subscribers located far from local rural exchanges. The lines consisted of a PMG, or post-master general, section constructed from the local telephone exchange out to a prescribed maximum length, which is probably just outside of town in

most places. Then, from then on, connected to a private erectly section extending to the subscribers.

What I'm proposing here, is a 21st Century version of PPE. Basically, it's in-ground fibre optic cable. It's by a standardised design. It's built by accredited contractors, funded by the rural customers concerned. Each customer basically builds from their property, from the upstream side of their property to the downstream side of their property, plus the lead in into their house, if you know what I mean, which I'll show you on the next page.

Each customer, as I said, also funds their own lead in. Then it is gifted to NBN or any other carrier that is interested in getting into this space, e.g. Telstra, for long term operations and maintenance. The summary of all this is, customers have skin in the game. They're putting in towards this, so they obviously contribute towards it, but they take ownership of it too.

So typical PPE build, it's a bit hard to show you this slide. But as you can imagine, that's the property and that's the street, the road it's running on. Say this farm has got a two kilometre frontage to the road. He basically builds his trench, digs his trench on the inside of his fence line. There's a pit at the upstream end, and the lead in to his house. All that could be dug by him, the farmer, or via contractor if he doesn't want to do it himself. He'll just pay a contractor to come and do that part.

Basically, that network will be gifted then to NBN or Telstra if they want to be the carrier of that area. That basically provides a service, a fibre optic service to that farmer, as long as is mandated that every other farmer in the area upstream from him, is also going to contribute. This is where it gets political.

The benefits of 21st Century PPE. Significantly less cost to tax payers for a start. Tax payers aren't going to be funding this. It may be partly. Obviously, there'll be some, because there'll always be bits and pieces of contention of who's responsible for it. It creates local employment in the regions. The regions need employment opportunities. It's not just farming out there. They need people to spend money out there to local electricians, local excavator contractors. Farmers themselves, they could start their own businesses doing this on the side.

It provides rural customers with an equivalent service, which is absolutely key in all these, everyone's presentation, we need equivalent service for rural people. It's highly scalable. It's as scalable as you can get. There's no other technology that's scalable. Fibre is the only one. All the rest have got serious limitations without truck rolls, basically, having to send the truck in to build a new tower or whatever. Radio is the only one that you could partially argue some scalability there. It's a long lifespan solution, greater than 50 years. I've been in this business all my career and the first fibres that have gone in are still in service today, and no signs of failing.

The other thing that the Productivity Commission should consider is that the NBN satellite is just like the DRCS of old. It's already getting cooked in certain spot beams,

I'm sure. I know somebody I was talking to the other day who works for Telstra, their brother lives in Serpentine, which is just out of Perth, and from the day their service went in it was great and then it's just got worse, and worse, and worse. That's because more and more customers are getting on and it's just cooking it.

We really want a situation where the NBN satellite is really down to just the most remote of the remote customers. At the end of the day of all this in, maybe, 15 years time, rural copper, HDRC, all the two-channel radios are just history. It'll only be fibre or mobile.

So the summary version is, optical fibre is the preferred universal service technology. The 21st Century PPE concept delivers FTTDP in rural areas. Rural customers have skin in the game. They've got some ownership in this, and they also have to pay for this. Tax payers are not imposed with a large cost burden. It creates local employment, in which the customers can, themselves, assist in construction. NBN satellite can be de-loaded and only used for the most remote locations, e.g. islands like Christmas and Cocos Islands, Lord Howe, Norfolk, any other island that's just too expensive to deliver fibre to. Even the Abrolhos Islands here in WA.

MR LINDWALL: Or remote Australia, I guess?

MR MANGANO: Yes, the various remotes, Cape York, whatever. It provides rural Australia with a world class telecommunication service that assists Australia in remaining globally competitive.

MR LINDWALL: Thank you very much, Andrew.

MR MANGANO: Yes, yes.

MR LINDWALL: Is this a submission we can put on our website?

MR MANGANO: Yes, yes, yes.

MR LINDWALL: Perhaps we could get it emailed to PaoYi later on?

MR MANGANO: Yes, yes. I can do that. Yes.

MR LINDWALL: Then if we can do that.

MR MANGANO: Yes.

MR LINDWALL: The NBN, has a Technology Choice Program where people - I know in the cities, but I don't know elsewhere - can theoretically, if you're on fibre to the node, extend fibre optic to your street and pay some money. Isn't that doing this or what's the problem with that particular program?

MR MANGANO: The problem we've got here is this is more targeted to rural areas for a start.

MR LINDWALL: Yes.

MR MANGANO: The problem is, with those sorts of solutions in the metro area, the metro area is different because they've already got pipe in the ground. In the rural areas, they don't have pipe in the ground once you leave town. It has to be dug up any which way. Looking at the metro area scenario, I've got a personal view as well that fibre should be the answer, and that the customer should be paying their lead in part.

MR LINDWALL: Yes, yes.

MR MANGANO: Not like this FTTDP, which I really think is a bad move. Honestly, from a technology point of view, is a very poor move.

MR LINDWALL: Fibre to the distribution point?

MR MANGANO: Yes, in the pit. I think that's going to come and bite them very hard in the future. It would be better that they just said, "Okay, we're going to deliver to the pit. You've got to pay the full cost of getting out to the pit from your house". That's where NBN could save a pile of money today if they went down the road, instead of this obsession about delivering it right to the house, which no other service does.

MR LINDWALL: Yes.

MR MANGANO: I actually wrote this in my official submission to the Productivity Commission's review, is that lead in components should be 100 per cent funded by the property owner. It's got no benefit for anyone else but the property owner. If you go to underground power, you've got the same. You pay for any service, water. It's always that you pay for the cost. Why NBN decided that we've put fibre right the way to the house - someone in this room who had a lead in done, it took four attempts to get the service on. Four attempts, thousands and thousands of dollars to get the lead-in done of his house. Yes. I mean, it cost him nothing. He's happy, I'm sure.

MR LINDWALL: Yes, yes.

MR MANGANO: But the long and short is - - -

MR LINDWALL: The tax payer paid for it, yes.

MR MANGANO: The tax payer paid for this and now NBN, with this silly work around with FTTDP, we're going to spend a fortune putting this box in the pit and then we'll probably eventually have to rip it out anyway and put fibre in. But getting back to the rural scenario.

MR LINDWALL: This is the difference, the point of difference is, we have to dig up - to get fibre in the rural areas, there is no pipes to pull through. You've got to basically dig it all up. There's no option. It has to be dug up.

MR LINDWALL: Yes.

MR MANGANO: The only way to do it, without tax payers shovelling huge amounts of money, is that the owners of the property pay for that section within their property boundary which then, obviously, they can look after it. They know it's there, they had to put it in. So they're not going to go and dig it up and hit it, obviously, "I'm not going to dig there because I paid for that to go in". It's got benefits as well, yes, for - - -

MR LINDWALL: But they're not allowed to do that at the moment? Get into NBN and - - -

MR MANGANO: I think NBN wouldn't even look at it.

MR LINDWALL: No, that's all right.

MR MANGANO: They wouldn't even think about it. This concept would be too far off their radar. Their view is satellite only in the bush.

MR LINDWALL: Where the Telstra copper lines are currently running what type of conduit are normally - - -

MR MANGANO: They're not in conduit.

MR LINDWALL: No.

MR MANGANO: They're not in conduit. Only in the towns themselves. Once you leave town, basically, conduits end. There's no conduits beyond the end of town. It's all direct buried. Always has been. Yes. You could put this in pipe too, but it cost more.

MR LINDWALL: Yes.

MR MANGANO: If I told them to, yes, say - - -

MR LINDWALL: So fibre optic can be laid without a conduit?

MR MANGANO: Yes, yes. It normally is. In the bush, it normally is laid neat in the ground.

MR LINDWALL: How much do you think it would cost? If you're a property owner and you've got, say, I don't know, two kilometre run to take your fibre optic, how much do you that would cost to lay?

MR MANGANO: Well, the cable itself is worth $2 a metre, so that's $4000 of cable.

MR LINDWALL: Yes.

MR MANGANO: But it all comes down to who's going to dig the trench.

MR LINDWALL: Yes.

MR MANGANO: If the farmer has the equipment to do it himself great, he'll do it.

MR LINDWALL: He'll do it.

MR MANGANO: He'll just do it with his own machines.

MR LINDWALL: It doesn't have to be that deep, I gather?

MR MANGANO: It varies, 750 mil, yes, maybe 900 if he really wanted. The deeper you go the more protected it is.

MR LINDWALL: Yes.

MR MANGANO: Obviously, that specification would be - in rock it might be a bit less, because in rock you can't get that depth.

MR LINDWALL: Yes.

MR MANGANO: In tough terrain. But in typical terrain, yes. He's got the machine, he could do it. Otherwise, he could pay a local contractor to do it.

MR LINDWALL: Yes, yes.

MR MANGANO: It might take him a couple of days, say, to plough it in.

MR LINDWALL: Yes.

MR MANGANO: Yes. But at the end of the day, he's paid for it, not you and I.

MR LINDWALL: Yes, exactly. And he's getting a much better service than he would with the satellite.

MR MANGANO: Yes, exactly.

MR LINDWALL: Exactly.

MR MANGANO: Yes. For $8000. If you gave me the $8000 instead of giving it to NBN for Sky Muster, I know what I'd do with it, I'd put it in the ground. I'd put it on the optic fibre.

MR LINDWALL: Exactly, yes.

MR MANGANO: Yes. But that's what you're effectively doing, we're spending $8000 of tax payers' money for something which we know in 15 years we're going to have to throw it away. Whereas this solution, basically, you won't be throwing it away. It'll be there for many, many lifetimes, I could put to you, yes.

MR LINDWALL: I think that's a very good idea.

MR MANGANO: Yes, yes.

MR LINDWALL: Thank you very much.

MR MANGANO: Thanks.

MR LINDWALL: Do you have any final points, Andrew?

MR MANGANO: Yes, just going back to the lead in thing.

MR LINDWALL: Yes?

MR MANGANO: I think you must also consider the metro areas, should the NBN really be doing lead ins? I think you should say to them, "This isn't right, especially when it's costing probably 20 to maybe - I don't know, what do you think, Robert, just sorry - how many percentage do you reckon it would be to do the lead in, of the total cost?

ROBERT: I couldn't tell you.

MR MANGANO: Yes, couldn't say. It could be 30 per cent.

MR LINDWALL: Yes, but I get the point, yes, yes.

MR MANGANO: 30 per cent of the cost of what every NBN service is going towards the lead in front component. This FTTDP is probably going to cost the same, it's just putting the box in the pit. But, yes, I appreciate if you could take this onboard.

MR LINDWALL: No, no, I think - - -

MR MANGANO: This would be great, yes, yes. Thanks.

MR LINDWALL: The other point about the metro areas is that, I know there are limited numbers of contractors, but if you were responsible for your own lead in then you could find another contractor and take off strain from the NBN deployment as it's going out.

MR MANGANO: Yes.

MR LINDWALL: Because they can deploy their resources to spreading it quicker not to the home but - yes.

MR MANGANO: That's right. Again, they'll have skin in the game.

MR LINDWALL: Exactly.

MR MANGANO: The people who want the service, are paying for it, so they've contributed towards it, rather than - and bypass those people who don't want it and say, "Well, if you don't want it, we'll just keep going past you and forget you".

MR LINDWALL: Yes, yes.

MR MANGANO: **"**Then you can come back later and pay even more to get it connected down the track". It just keeps the job much tidier job. Eventually, we all know that fibre is the right answer. I think everyone in this room would probably agree that fibre is the right answer in the long, long term. That's why the title is 2030. We've got to think that far ahead, 2030, which is 15 years from now. Yes. Thanks. Yes.

MR LINDWALL: Thank you very much, Andrew.

MR MANGANO: Thank you.

MR LINDWALL: Yes, that's great.

MR MANGANO: Yes.

MR LINDWALL: I'll now invite Ted Jack. Good day, Ted.

MR JACK: Good day.

MR LINDWALL: If you could just state your name and who you're representing and say what you wish?

MR JACK: Sure. My name's Ted Jack. I am currently a community development officer for the shire of Coorow. I'm there in that capacity and also as a private business owner. Basically, here to summarise a lot of the well-said points today, a lot of very knowledgeable people in here, including yourself, that have done some good recommendations on this.

Basically, the Commission's findings have some good recommendations, but they'll require additional research and planning on a lot of the gaps, namely provision of satellite where there's currently ADSL and also, where there's inadequate or adequate Telstra mobile reception, that's to be determined. Obviously, recommendations based on your TSO and NBN infrastructure is pretty sound, excluding the satellite Sky Muster services. Obviously, there's going to be an inherent latency issue there and that's going to negate a

lot of the VoIP communications and if you're in an inferior Telstra coverage area, you're going to suffer horrendously under that.

Also, I'm going to be talking more about the data aspects of it, namely the speeds and also the data allowances that NBN Sky Muster is going to impose on a lot of these consumers and also public sectors. As others have identified, there's over 20 government authority areas that are going from ADSL2+ to Sky Muster. To answer your question before about why aren't these local government authorities going onto NBN Sky Muster, it's simply it's impossible. You cannot adequately service your constituents or your residents, even your own basic internal services, with 150 gigabytes per month, and a 25 megabits per second maximum throughput. It's just not possible, especially nowadays.

I mean, if we talk about consumer interests, we're in a global economy now. It's 24/7 economy. Everyone is interconnected and, obviously, digital communication closes that divide. If I want to talk to someone in America for example, I can. I can do that over VoIP or any sort of voice call. I'm going to have about a 400 millisecond inherent delay. If I go onto Sky Muster, I'm talking about a one second delay, because you're adding that 400 millisecond stack to it.

In our local government authority, there's a particularly weird issue going on because we use a virtual private network to connect two regional offices. We've got one on the coast, one inland. They mainly do that over ADSL connections. But, obviously, the one megabit per second upload speed is just horrendous. The other office, that the server is not located in they, obviously, have to remote into our server to work. You've got a little bit of a delay there just in movement and all that. But if you want to even open an email, you can literally watch the text scroll across the screen. It's just shocking.

Under NBN satellite, the five megabits per second upload, maximum upload, will somewhat appease that but, obviously, you're talking about huge data throughput there. I mean, when you're talking about thousands of gigabytes on our server having to be opened at remote offices across multiple desktops, the draw on it is just too much. One of these offices will be serviced by fibre to the node, so that will partly alleviate the issue. However, the server's not in that area. The server's on the ADSL line. So the upload restrictions is basically going to have, yes, a terrible impact. NBN won't help that at all for the other office.

Talking about Cloud services, obviously, for local government authorities we're moving more and more onto Cloud services. You can talk about things like remote desktops, like we use a lot. That requires a high upload speed from the sending end, from the server end. Basically, if you start adding latency from the NBN to that when you're remoting in, work and productivity drops a lot because every input has that point two to point six second delay on it. I know, personally, from working with such delays, it drives me insane.

I'm a very power-user, so I chew through my ADSL data allowances. I'm on a one terabyte a month and I'll go well over 50 per cent of that, even by just slow speeds. But

I'm just constantly pumping things out. I'm a content consumer and creator, so things like upload speeds are quite important to me. NBN Sky Muster will help but, obviously, the data restrictions - $200 a month for 150 gig. I mean, 75 gigabytes of that can be used during peak. We can all schedule our downloads and uploads to be off-peak, but then you're forcing congestion onto the off-peak time. That carries then, onto peak time. It's a catch 22 scenario there.

You cannot expect the average household to be technically savvy to get inside this side of things and start really structuring their download speeds, download times, and things like this.

Other government departments are going to be severely hindered like these things, we've got things like DEC, NAC, all the NRM divisions, Department of Planning, Department of Transport. Transport has licensing centres in every government authority. A lot of these things have latency ceilings as well, so they'll time out if there's too much latency, especially EFTPOS sort of things. Some of them aren't too bad.

But, I mean, we can go onto Telstra mobile as well, but we've got our own separate issues there. I mean, we fall in one of those well covered areas. My house is under the very well covered area, I drop out completely. No signal. None. I'll switch between 3G, H+, 4 G. We have a 4G tower about four kilometres out of town. It covers everywhere but the town, literally.

There's about three farmers that have 72 x 40 megabits per second connection. Beautiful. They're happy as Larry. The other 200 people, nothing. We're on, if we're lucky, half a megabit per second on the 3G. This is pretty shocking. I mean, that's under the Mobile Black Spot Program. We can get into that later on. Obviously, there needs to be a bit of working around that and future considerations.

Telstra's now looking at doing a small cell in town. We've got an exchange about 50 metres from our shire office there. There's already a 90 metre tower there. They're just going to whack some equipment on that. Fixed. Done. That's easy. Why they couldn't have done that in the first place is beyond me.

We talk about alternative technologies for local governments. Having fibre running past the front door of our office and directly to the exchange. I mean, we've got three or four different fibres running up the route. We've got Western Power as well going past us. It's black, it's dark fibre, totally unused.

I sought a (indistinct) Telstra to get a dedicated fibre line into our office. We thought, great, if we can get some really good throughput on that and good band width, we can maybe propagate it out for part of the community. For a two megabit by two megabit service that started out at $3500 a month. $3500. I mean, I could get bonded ADSL2. It's going to be vastly superior to that at $150 a month. They're the sort of options we're looking at.

If we wanted to go onto 4GX for data, we're just going to be paying thousands of dollars a month for 100 gig sort, or a few hundred gig, sorry. It's not really feasible to operate on that sort of thing, let alone from a private sector or a business point of view.

Putting on my business hat at the moment, but I do a lot of aerial surveying and things like this. I do a lot of photography and things. If I want to do a small area map, say, a few hundred metres by a few hundred metres, it might take two or 3000 aerial photographs. They've got to be overlapping for consistency things.

I can use a cloud based solution and I can rent a rendering server in America or any sort of data centre. If I wanted to buy it myself, it'd cost me a few hundred thousand dollars. I can rent it for a couple of bucks now, if I can upload my few thousand images to them in a timely fashion. On ADSL, it'll take a while. I mean, we're talking in the double digits of gigabytes. On Sky Muster, that would breach the fair use. Bang. Done. Out the door. Obviously, I'd break my data allowance very quickly. But, yes, obviously the first few gig would be great. Then you've got to process it. Then you've got to download it, download all the mosaics and DSMs and 3D emission, all these sort of things.

Then I've got to get them to the client. Now if the client's close by that's great, I can just drive the thumb driver over to them. If they're overseas, "Sorry, I'm going to have to express post you a thumb drive", which isn't conducive to good business, especially nowadays in the global competitive market, everything is digitally delivered, and especially when we start talking high resolution imagery and things like that, like 4K. I mean, they're got 4K Blu-Ray now and things, but that's a very high end cost again. It's not conducive for all the other users, "Now, I've got to buy a 4K player just to play this thing".

Overall, we need to basically ensure that these regional areas, especially government authorities and government services, like health and education, things like tele-health where you are doing video monitoring and video examination by specialists in Perth, New York, anywhere like that, they need very high resolution because if I'm using HD, which is 720P, that's classified as HD, if I'm looking at a skin cell or anything like that, it's going to be breaking up. It's going to, yes, pixelating things that's totally unfit.

We're going to be talking about two and 4K here, which is now pretty much the global standard for video. Everyone's got 4K TVs. That's all you can really see now. Computers, 4K monitors. Even your phones, 4K screens. The data consumption for 4K is, obviously, huge. It's massive. I can stream 4K Netflix at home on my ADSL on a 15 megabit second connection, sort of thing, but you can tell where it does tease out.

My current ADSL is quite good. I get about 20 by one. So that's really good, better than a lot of metro areas. However, if I went onto NBN satellite, I'm paying for a slightly better speed, I'm going to be paying twice as much per month for about one-ninth of the data allowance.

MR LINDWALL: But you'd be getting a faster upload speed, of course.

MR JACK: Yes, I'd be getting a slightly faster upload speed. As it is, I'm currently looking at, basically, just pre-paying 4GX mobiles and just doing that for my uploading. For video upstreaming and things, it's not that great. I mean, NBN satellite, you're going to have the inherent latency with that, but that's doable on a stream. However, you're going to be breaching that fair use policy all the time. I'm going to be speed shapes to 256 filters per second all the time. It's horrendous.

Everyone else that wants to do this, content creators, or anyone that wants to utilise upstream, is buggered under NBN satellite. ADSL2, it's painfully slow, but it will do it. I can set 20 gig to upload and I'll do it in a week or so, but it'll do it. I'm not going to get a message one day later going, "Bang, you've been shaped. Enjoy 256 filters a second for the next 29 days". Yes, that's where that is.

Things like education, we've got high schools. Obviously, they're going to be designated onto NBN satellite. I mean, there's going to be extra educational data allowances. You've got a high school of 200 students, and let's talk about an Ag College, for example at Morawa, they've got boarding students. So you've got people that are going to be constantly requiring connection. They're going to be away from their family and friends. They're going to be digitally divided. They need to communicate with them. They need to be entertained, all these sorts of things. They can't on NBN satellite. There simply is just not enough data there. I mean, you can put 10 services on it and it still won't be enough. But NBN won't even let you do that.

Also when we talk about data allowances on NBN, there's the 400,000 premises that are going to be served, and also the recent announcement by Qantas that they're now going to be providing in-flight via SAT and NBN Sky Muster. Specifically, he said, "This is not going to be just for checking for Facebook". This is for browsing, streaming content, obviously, video and all these sort of things.

When you're talking about an Airbus A330 or something, with 300 passengers on it, these are captive passengers. They've got no other choice but "I'm going to stream HD content". 300 people all streaming HD content and drawing off the satellite that is for only the most deserving people. I mean, how many extra users is that? Is that another 100,000 users, 200,000 users? Who knows?

Obviously, they're going to be going across spot beams, but that means for every spot beam they go across, all of a sudden congestion is going to go through the roof. People that are trying to do business or education services, or even just use it, they're going to be going, "Oh, my God, I'm one megabit a second".

I mean, talking of the user base, 135 gigabits per second throughput on the two satellites, you spread that across 400,000 premises, if you want to receive the maximum speeds, 25 by five, only 1.35 per cent of the users can ever be drawing on it at one time. 1.35 per cent, that is absolutely shocking.

To, basically, say to all these towns that aren't serviced by NBN fixed wireless or fibre to the X, Y, Z, "You're going to go from a one terabyte service at 20 by one at $80 a

month to 150 gig a month. Only 75 of that you can use during business hours. You're going to have 600 milliseconds latency, or between two and 600 milliseconds latency. You can't use VoIP. You're going to have severe restrictions on what you can and can't download and upload", no one in their right mind would want to choose that service.

But if you go by the recommendation that everyone base it on the NBN structure as it is, we know that NBN Sky Muster is not really sufficient for future needs. It can barely contain current demands. I mean, for those that have never had a comparable service, it's the bee's knees.

For those of us that are on ADSL2 and have a decent connection, it's the worst case scenario because I'm being relegated to a vastly inferior service and I have no other options. I can choose to get however many thousand dollars a month slower fibre connection. I can go Telstra mobile and pay hundreds of dollars a month, or I can sit on ADSL and hope Telstra don't switch it off when they designate, "All right, the NBN rollout has been completed in this area, we're decommissioning the copper networks".

There needs to be some sort of enforcement or regulation to ensure that these towns that are on a better service than what NBN sell up would offer, aren't decommissioned in the future, there is some protective measures for them, especially for government department and education health services.

MR LINDWALL: I think you'll find that there's only a small percentage though. The 400,000 premises that are under this Sky Muster, I think there's about two or three per cent that have ADSL connection. That's, yes, 96 or so, or more, 97 per cent who had no connection at all before.

MR JACK: Yes. So they'll be finding this service great. But these two per cent, however, we might be providing services to, I don't know how many other percentages of those people that would be on Sky Muster because they can't get them on their current service.

MR LINDWALL: Yes.

MR JACK: So that two per cent is very important that we have a very solid, very good, reliable communication method. That's pretty much most of what I've got.

MR LINDWALL: Okay. All right. Thanks, Ted.

MR JACK: One more thing, with the future considerations, the original broadband scheme, it would be good to see consideration given to funnel and prioritise a lot of that funding into getting the cellar (indistinct) designated areas as it is with their Sky Muster service on the 15 year life span, onto an alternate service before that life span completes by 2030 or whenever it is. Also, the Mobile Black Spot Program, obviously, further consideration for that backhaul pro-use of NBN fixed wireless facilities and other private sector facilities, services, for example.

Just with the Area Switch Program as well, we sought a quote for an area switch, a Technology Choice Program. Unlike other areas which are on fixed wireless or fibres in the node and they want to choose fibre to premise, you just pay the cost difference. When you're on satellite, you pay the entire thing.

So for us to move to fixed wireless from satellite, over $1 million just for one town. If you do the mid-west area, you're looking at 10, $20 million under NBN. Private providers can do that for under a million. But we cannot basically say "We want to pay the difference between NBN satellite and fixed wireless". They just go, "No, we don't care". Even though, probably because they've already bought all the equipment for the subbsies (indistinct).

So those $8,000 per premise, they're not going to subsidise us to go to fixed wireless and save us some money. They're just saying, "Too bad, you foot the whole bill". It's prohibitive costing. We cannot do it. There's no way we can justify $1 million to go to fixed wireless which may be two megabits per second up to 50. There's no guarantees on that.

There needs to be some sort of intervention there to say when you're doing - and Technology Choice on Area Switch Program, especially for local government authorities and things like that, there should be a lot more consideration given to subsidies for that, especially if they're in a satellite zone because, as we've seen, there are no other choices. All the other choices are, how many tens of thousands of dollars are we willing to pay a month? Yes, it's just not feasible.

MR LINDWALL: Thanks, Ted. What do you think about Andrew's idea about users paying for the installation to their - - -

MR JACK: Brilliant. Definitely. I reckon that would solve a lot of problems. Someone like myself, and local government authorities, we have shown we are willing to pay more to get the service. But they've got to meet us halfway. Some people, like a lot of farmers I'll talk to you, they expect the service delivered to their door and just say "That's not viable. Why would you pay millions of dollars?" "Would you expect us to build a road all the way to your house and (indistinct) six lanes wide?"

MR LINDWALL: Yes.

MR JACK: So as long as you can get the backbone and the backhaul in place, like expanding the transit rings of NBN and utilising a lot of these dark fibre and unknown networks, once you get those out there, it's easy to propagate out. You can start using microwave links if you want. If a farmer is 30 Ks away, he can create a microwave link from a good fibre area. But unless that backhaul is in place, you've got no option. I mean, the closest NBN transit ring to us is Moora 90 kilometres away. I mean, $2 metre, or whatever it is, or $2000 a kilometre or so, yes, $180,000 or whatever, it's not too much. But - - -

MR LINDWALL: Plus the laying costs.

MR JACK: Yes. Plus laying costs, et cetera, so it's not too bad. But if you extend these rings out a bit more, you can start getting those points of inter-connectivity and propagating inwards and creating all these other things. There can be a lot of private co-investment for that, especially for the lead ins for large properties. I don't mind putting five, 10,000 or something if I'm going to get a fibre connection. Brilliant. 100 by 100, 100 by 40 megabits a second, I love it. It'd solve all my problems and a lot of others as well.

MR LINDWALL: The Federal Government is going through with its Digital Transformation Office, I think it's still called or something like that, Agency, about making all Federal Government services be compatible with satellite service, as in not affected by latency, also use very low band width. I think banks are doing the same. Do you know if the shires and the Western Australian Government is doing similar things? Because it seems to me that, at the very least, I mean, sure, we're talking here about moving some part of the satellite spectrum to fixed wireless or fixed line, but there will always be some people in the satellite region.

MR JACK: Always, yes.

MR LINDWALL: They need to be catered with government and other services that don't use so much band width. Surely, that's an important thing of designer websites, so they don't actually use too much band width.

MR JACK: There is that as well. But, at the same time, 98 per cent of people shouldn't suffer because you've got to design things around two per cent. That goes both ways, obviously.

MR LINDWALL: Yes.

MR JACK: But you do need to have consideration. So even if that's a separate portal or separate, I don't know, anything basically, but you can't base an entire thing like that on all these things because you're going to be - a lot of the advantages of high band width websites and things like that, you're going to lose, especially with the Cloud aspects and things. But, yes, I'm not sure about Western Australian Government or things like that, basing their IT criteria around that, but it'd be good for consideration. But you've also got to think about bringing everyone up and not bringing everyone down to that level.

MR LINDWALL: Your shire, how many of the residents there would they pay rates electronically mainly now?

MR JACK: Decent percentage of them actually. Most of them will just ring up and say, yes, "Can I pay this by X, Y, Z?"

MR LINDWALL: Credit card, yes.

MR JACK: Use BPoint, all those sort of things.

MR LINDWALL: What do you think about the Mobile Black Spot Program and how it's worked in the shire and how has your interaction been with the WA Government and the Federal Government over that?

MR JACK: It's a mixed bag that one. The Black Spot Program is a brilliant one. Just in its current form, it definitely needs a lot of revision. Telstra has basically, nearly no transparency with it. As you can see with numerous towers throughout the mid-west as well, our one four kilometres out of town. I can see the tower. No reception. It services the farms, things like that.

We've been complaining for months. We've been going through all the processes, the local government authority processes as well, everything. They just stand there and go, "There's not an issue. There's not an issue". We say, "There is a bloody issue". And they say, "No, there's not". So what do you do?

Now they've recognised there's an issue and they're going to basically - because I'd constantly capture screenshots. I had to drive within 500 metres of the tower sometimes to get 4GX reception. That's sub-par to any sort of standard. When you're talking about hundreds of thousands of dollars and millions of dollars per tower to provide no service, it's shocking. There needs to be a lot of revisions and a lot more, I don't know, regulatory framework in place to make sure that they do report what was predicted and what is current.

MR LINDWALL: Yes, yes, yes.

MR JACK: Also provide a lot more services from these towers. We're talking about a lot of public funds, as well as Telstra funds, going into these towers. But we need to ensure that they're getting the most bang for their buck and the most service provided for public money.

MR LINDWALL: Got any other comments you'd like to share to conclude, Ted? Anything about pay phones, perhaps, in the shire?

MR JACK: Our pay phone has just recently upgraded to a Telstra Air Hotspot, which is great, except for all the businesses surrounding it already are Telstra Air Hotspots, so it's a bit of a done duck, that. They're good. In some regional areas, they are the only reliable source of communication, so there needs to be considerations for that. In our community, it's not an issue. No one really uses them. We'll get a few out of the low socio-economic demograph using them. That's about it. Mostly they're just, if it does rain, people go in there for a bit of shelter. That's about it. Yes, there does need to be some changes in that regard though, considering the costings.

MR LINDWALL: All right. Thanks, Ted, unless you've got anything else you'd like to say?

MR JACK: I think that's it. Thank you very much.

MR LINDWALL: You've covered lots of issues. Thank you very much. Yes.

MR JACK: No worries.

MR LINDWALL: Now, is it Kevin Lee, I think, wants to say something?

MR LEE: Yes.

MR LINDWALL: Hello, Kevin. Good to see you. If you could just say your name and organisation and then say what you wish?

MR LEE: I'll be reading from here.

MR LINDWALL: Yes. Yes.

MR LEE: Thank you for the opportunity to present to the Commission on the draft report on telecommunication. You also (indistinct) this obligation - - -

MR LINDWALL: You should start with your name and organisation first.

MR LEE: Yes.

MR LINDWALL: Okay?

MR LEE: My name is Kevin Lee, representing the Department of Regional Development of the government of Western Australia. The department works in concern with all Regional Development Commissions here to develop sustainable regional communities. The department also administers the Royalties for Regions F (indistinct) and has been funding and co-funding with the Commonwealth Government, programs to expand telecommunication options in regional WA, particularly the Mobile Black Spot Program.

The department understands the complexity in defining what is considered universal when communication is inherently an individual expression and it can also be private. In urban and sub-urban markets, market competition provides an environment that facilitates services improvement. In areas with sparse population where competition is limited or even non-existent, defining what is essentially all of our minimum human requirements, becomes essential. This definition also cuts across each range as data and statistics show a clear decline in voice services as younger generation gravitate towards online services with far less requirement for voice.

The department broadly supports recommendations contained within the draft report. Understandably, there has been a fair bit of attention on NBN satellite services, especially its limited data capacity and inadequacy as a replacement voice service.

According to NBN, there are 60,000 premises in WA that are or will be serviced by its satellite service, although there are no reliable statistics to show the number of premises not covered by mobile services. As governments have been part-funding their expansions, technology change, or growth population are the only variables left that could change the equation.

NBN has indicated that property owners who are in their satellite coverage, have the option to keep its fixed line service and they will be required to move to satellite. However, universality and utility services provide a sort of security blanket the community holds dear.

The department supports the concept of having targeted programs to serve different constituency according to their needs. This would include people living out in the bush, people out in pastoral stations, people with disability, people with life threatening health conditions, remote indigenous communities, people without permanent fixed address, and all the people with limited digital literacy capacity.

As such, a fair funding mechanism to support services for these identified groups of communities becomes essential, as is government's ability to digitally provide baseline services to its people. As technological change is accelerating and is increasing providing means for communities to come together as groups, this framework will also have to provide mechanisms that allow these groups to work with different technologies and their chosen service providers to achieve the needs of your own. Thank you.

MR LINDWALL: Are there any particular improvements that could be made to the Mobile Black Spot Program that you can - - -

MR LEE: Currently, the Commonwealth Government puts out, essentially, a very wide call to the industry and to groups, as to where they think coverage can be improved. Having seen the system work, it all depends on how best your voices can be heard. Also in WA, at least, the Royalties for Regions Program have been part-funding with the initiative.

MR LINDWALL: Yes.

MR LEE: In general, that works well. However, as has been previously noted, it's, in some sense, limiting competition in some areas, because we ended up finding the carrier that can best rollout the service at the lowest cost. So that aspect of it needs to be looked at. As I've said before, in the vocal submission, universality would define the areas where there is no market. But once there is a market, then competition would take over to service their needs. Yes.

MR LINDWALL: Yes. Exactly. Do you have any sympathy for the view that's been expressed to us about a large amount of dark fibre that's being under-used and it could be better exploited?

MR LEE: Definitely, yes.

MR LINDWALL: What could, say, the Western Australian Government or the Federal Government or individuals and community groups or local government, do to facilitate that?

MR LEE: My understanding is a lot of dark fibres here are owned by, essentially, different utility service providers.

MR LINDWALL: Yes.

MR LEE: If those utilities are still owned by government then, obviously, it is within the government's ability to change that. But, at the same time, there are a lot of new infrastructures that have been built and partially funded by government that are not required to either lay fibre or to make the fibre available. I think the government can do a lot more in changing that mindset, I suppose.

MR LINDWALL: In a sense, the government is double-paying. They're paying to have the fibre laid for a particular purpose.

MR LEE: Yes.

MR LINDWALL: And then they're paying again to have it for satellite or other usage, when it may - yes. It's quite interesting, but it's not unusual in government policy. Anything that you'd like to say about - well, it'd be hard for the department to say, I guess, but about the Sky Muster Service in terms of its roll out in Western Australia, and what have been the lessons and the quality of the workmanship and so forth?

MR LEE: We have limited exposure in that regard. Most of my experience in that area comes from when I was working for the Pilbara Development Commission in dealing with the pastoral stations.

MR LINDWALL: Yes, yes.

MR LEE: But then, at the time, it was issues relating to the interim satellite service, so I can't really pass judgment on what the new service would be like.

MR LINDWALL: Yes, yes. Okay. Did you have, Kevin, anything more that you'd like to say?

MR LEE: No.

MR LINDWALL: Okay. Well, thank you very much for coming today.

MR LEE: Thank you.

MR LINDWALL: Appreciate it. Now, I could - Elyce Donagy, I guess, is that right? Have I said it, pronounced that correctly?

MS DONAGHY: Yes.

MR LINDWALL: Great. Nice to see you. Just say your name and organisation and what you wish to say. Yes.

MS DONAGHY: My name's Elyce Donaghy. I've from the Isolated Children's Parents' Association of Western Australia. I'm a State Counsellor. I'm also the Communications Portfolio holder for the State and I'm also the branch president for the (indistinct) Branch so that centralises around Kalgoorlie as far north almost as Wiluna and out to (indistinct) and we have a member down near Esperance. We're quite broad.

My branch, personally, are essentially made up of distance education families. The majority of my branch members study with School of the Air in Kalgoorlie. I guess, that's where I'm coming from, more of a personal touch rather than a business touch. I'm in my fourth year of study, or as a home tutor for my daughter, studying via School of the Air. I had done two years with my eldest daughter, who's now at boarding school.

We are now a week into school lessons with our school and I would say probably half of the students attending classes have been connected to Sky Muster satellite. I'm in the process of trying to get my Ed-port connected. I have a personal connection, but I need to call them back and give them my NTD details.

We've found, in our first week of lessons, we've already had one day where all the students studying via Sky Muster were not able to attend lessons. I was able to attend that day because on the edge of broadband, mobile broadband, so we were able to connect ourselves regardless of whether the satellites up or down. But that's not the case for most of our remote families. On that day, I think we had about five students that could access their lessons and the rest of them were all waiting, obviously, to find out if their satellite could be reconnected.

We're also finding that we're having students drop out of lessons and also sound quality is an issue. We're having trouble understanding some of the students when they're speaking on their lessons. For us, I guess, with regards to the USO, having satellite as our only form of communication, would mean that those families would have no way to contact the schools or, I guess, make emergency calls if their satellite is down. That's a huge issue for us as a branch to only have that as an option. Of course, along with the rest of Western Australia, being under water in the last two weeks, the satellite has been very unreliable as the cloud cover has come across.

With regards to data, in regards to the education port, the 50 gigabytes per student up to 150 gigabytes for three or more students, it's certainly fantastic. We're very pleased with that limit being applied for students. I can't see that my daughter could use more than 50 gigabytes for her lessons. If there are families out there using more than that, then I would say then they're probably not just using it for lessons.

MR LINDWALL: Yes.

MS DONAGHY: That, I guess, becomes an issue for the Education Department to be looking into. But in a sense of a personal connection, we were connected to the 150 gigabyte per month top plan being offered with clear networks with a 60 gigabyte peak data and a 90 gigabyte off-peak data. We consistently used our 60 gigabyte in the four months we had it connected last year. We've since dropped our plan down. The cost was just quite high in the scheme of things. I just quickly had a look at our data usage for those four months that we had it running. July, we were able to access 60 gigabytes of our off-peak data and it dropped down to 30 gigabytes by October. We were finding it harder to use the off-peak data as we were going. And my husband is quite technical and able to set up time downloading, updating. We were finding that, more often than not, it wasn't connecting during the night.

MR LINDWALL: Wow.

MS DONAGHY: And we would come in in the morning and it will be using our peak data.

MR LINDWALL: It's started, yes, yes. Which is a bit of a surprise when that happens.

MS DONAGHY: It is, yes, especially when you're limited to a small amount for your peak data. We just found that the off-peak data was, effectively, unusable. So most of the time we were paying for, I would say, 80 gigabytes for the 20 or 30 gigabytes that we could use in the off-peak. So we were paying $145 for 80 gigabytes of data a month, which is quite high in the scheme of things considering we come to the city and have buses with $99 unlimited data caps. I certainly don't think we need unlimited, but being limited to that 150 really does cause your family to really look hard at what you're using the data for.

We, other than educating my daughter, run a small business. My husband's a contractor. It's basically emails and some social networking. We don't let our daughters download videos. We don't have the capacity. We don't watch Netflix. We don't do a lot of those things that you hear of other people doing. So, yes, we found that the Sky Muster is certainly not what it's been talked up to be, yet.

MR LINDWALL: Yes.

MS DONAGHY: My hope is that we don't end up with congestion with the options of a lot of people that are being given satellite where they're closer to large regional centres, that's concerning for me. I'm only 40 kilometres from Kalgoorlie, so I guess I'm quite regional compared to a lot of our member base, and luckily enough can get the broadband Wi-FI.

MR LINDWALL: Yes, yes.

MS DONAGHY: But they don't. That concerns me that those families that only have one option will certainly have that possibility of so many people being on a system in the future. Yes.

MR LINDWALL: No, that's all right.

MS DONAGHY: That was just more a personal touch, I think, as such.

MR LINDWALL: No, no, that's quite good. Have you been using the interim satellite service previously?

MS DONAGHY: No, no. I came onto School of the Air when they weren't connecting anyone else to the interim. So we've used broadband up till now.

MR LINDWALL: Yes. But having travelled around people using it for the education portal they're pretty happy with it.

MS DONAGHY: Yes, yes.

MR LINDWALL: When it works of course, not when it's not working.

MS DONAGHY: Yes, when it is working. I think, I have certainly had members comment that it was more consistently usable than Sky Muster has been so far.

MR LINDWALL: Yes.

MS DONAGHY: Other than the fact that the data limits were so low. That's disheartening to hear that, "I would rather be back on the old one because I could use it most of the time", so that's a concern. Yes.

MR LINDWALL: Yes. I think the Isolated Children's Parents' Association, have expressed quite a good deal of information that we're giving Commission about the challenges of remote teaching. It's amazing what they can do, as I heard one example there, a student, a girl, has been taught the violin over the telephone.

MS DONAGHY: Yes.

MR LINDWALL: I'm not sure how you can learn the violin over the telephone, but - - -

MS DONAGHY: That's an interesting one. But, yes, the option's there are endless, really. Yes.

MR LINDWALL: Thank you very much for coming.

MS DONAGHY: You're welcome. Thank you.

MR LINDWALL: Now I could invite Amanda Walker. Good day.

MS WALKER: Hi.

MR LINDWALL: Have a seat.

MS WALKER: Yes. Thank you. I'll just grab my devices. So my name is Amanda Walker. I'm representing the Wheatbelt Business Network today. I just felt, listening to the other submissions, that there was just some critical issues that we should comment on. Just purely from the perspective of I am also a business owner, as well as chair of the Wheatbelt Business Network.

I suppose, telecommunications is an issue that we constantly battle with. It's something that is not easy in the regions. If anything, it's getting more difficult as technologies evolve, as options like Sky Muster, et cetera, come onboard, for a number of reasons, but partly because it's just so confusing and it's so misleading because it shouldn't be that hard to connect to the internet. I'll just start off. Apologies, I am going to read.

MR LINDWALL: That's all right.

MS WALKER: Just basically about the business association, the Wheatbelt Business Network, we are a member driven business association in the wheatbelt. We work for businesses in the wheatbelt, essentially, to build and grow the capacity of businesses across the wheatbelt. We have a network of about 300 businesses right now. They range from, in terms of location, Moora across to Dowerin, and across to Kellerberrin, into Merredin, down to Wagin. We've got quite a diverse range of businesses that we deal with on a day to day basis.

Essentially, just with regards to the draft report that we have been commenting on today, I mean, it is overwhelmingly obvious that telecommunications and the need and the way that they're employed across the country have changed. There is, obviously, the need to revise the USO and look at how it should be applied going forward. I mean, now that internet and mobile phones are our primary means of communication, access to these technologies should be universal.

We do have that digital divide in terms of affordability and accessibility that runs between every regional area and urban area across Australia. But, for us in the wheatbelt, it just costs so much more. It costs a lot more for providers to provide the service, but we argue that we actually generate significant wealth, particularly in the wheatbelt region more so relative to Perth.

In terms of what we want to say regarding the USO going forward, we would argue that deliver of equitable, affordable, and accessible telecommunications services is an investment. It's an investment in the region and it should be viewed as an investment, not a cost. When Julie represented earlier, she gave some figures around GDP and what we generate in regional areas. That needs to be taken into account. A serious amount of

business and economic contribution comes from regional Western Australia and that is often just put to the side when we're having to deal with things like telecommunications.

We also argue that the USO should also include internet and mobile phone services in regional and remote areas. We also would argue that government policy should not centre on the rollout of the NBN to contribute to accessible telecommunications, because we don't think NBN is, essentially, the answer.

Just some comments, just from the perspective of a business owner myself, and from the insights we gain by looking at various business industries across the wheatbelt and what they face on a day to day challenge, just some comments on what has been raised today. In terms of Sky Muster, I think it was raised earlier, Sky Muster has been launched as a household, almost a domestic use base. It's not really applicable to businesses. It doesn't have the service capacity and it doesn't have the reliability.

I can relate to - is it Elyce, our previous speaker - talking about that frustration of you see a cloud cover coming and you know you're going to be offline for the afternoon. That's just not conducive to good business practice. If you're working from home - I work from home as well as having an office. I've Sky Muster at home. I've got mobile data in my office, because I can't rely on either. I can't afford to primarily go with mobile data, but I can't rely on Sky Muster because it's just not reliable.

We also have an issue, which we have faced with quite a few of our members with, obviously Sky Muster, the satellite and the infrastructure is owned by NBN. But you've got the issue of the third party providers that come in to install the hardware, to connect you to the service. So you've got those third party providers.

We have had concerns from quite a few of our members in the inconsistency and just bad service, in terms of installing and connecting to the actual satellite service. So they've had providers come along to set them up. They've had to have a different provider come back on to set the router up, et cetera. Then this problem of they're still not connected.

I've got one business owner I was speaking to yesterday. They've had the satellite and everything put in three months ago and they're still not connected. So just there's this whole disparity between providers, who's responsible, who's accountable, where does the buck stop?

Obviously, the data issue with Sky Muster, I mean, we've spoke about this morning. That's a real problem in the business context. From the data perspective, I live in a town where we have got a Telstra tower. We received that last year through the Royalties for Regions on the Mobile Black Spot funding. If you're in town, it's fantastic. You've got strong signal, you've got great connectivity.

However, there is some issues around the maintenance of those towers. There was a drama with Western Power. So we've no actual power to the tower site, so it's a generator. But there's again disparity, who is responsible for the maintenance of the

generator and backup. We have had situations where the generator has gone flat and the batteries have run and therefore that, obviously, affects the tower.

MR LINDWALL: Yes, yes.

MS WALKER: Who's responsible for that? Telstra insists it's not them. Western Power says it's not them. So, what do you do?

MR LINDWALL: Buck passing.

MS WALKER: Yes. And that's just not good enough. It's just not good enough. It's not acceptable. It's business disruption. These are the challenges that we face on a daily basis, and it's just not good enough.

So there's also the issue of the Telstra towers which have rolled out. We've had a number rolled out in the Shire of Victoria Plains. I think we're on to our third tower going into Mogumber this year. The issue with the tower is it's being built around a 3G capacity. Why are they being built around a 3G capacity when we're already talking about the 5G network? What's the go there? I have spoken to Telstra about this and they have said it's a cost based scenario. Basically, I feel, from my perspective, we've been given the bargain basement run of towers. We have to wait then to demonstrate capacity in those 3G towers before we even get considered for 4G.

MR LINDWALL: 4G.

MS WALKER: Again, it's a challenge. It's not going to automatically happen because we're in the regions and that's how it has to roll. Again, it's not acceptable, okay. What else would I like to comment on? I would like to also, just from the Wheatbelt Business Network's perspective, we are very much aligned with the proposal that Juliet presented on behalf of Regional Development Australia Wheatbelt, in that the minimum requirement of the data speed - again, I heard you comment on the 25 gig requirement may be excessive, it may not.

But we would like to see equality. We would like to see businesses and household users in the regions, but particularly business users, have access to the same level, the same minimum level of speed, and of band width, of download and upload capability, that is offered to businesses running their enterprises in the metro regions.

I'm only 150 kilometres from Perth. I may as well be in the centre of Australia. For the ease and the access to the services that we have, geography doesn't really seem to matter. Once you're out in the regions, you have these challenges on a daily basis. It's really frustrating when you've got staff who are working on - I've got an online business as well as an office based business. We've got staff relying on internet connection for their productivity.

MR LINDWALL: Yes.

MS WALKER: I'm paying a wage bill which requires a core element of their work is dependent on consistent internet, because they can't do their job without internet connection. So that deters from my productivity, that deters from my bottom line, and I'm just one business. So I imagine that you multiple that across numerous business, bad telecommunications is eating into our productivity and it's also eating into our affordability and the money that we're generating back into our local economy. That's all I have to say.

MR LINDWALL: Thanks, Amanda.

MS WALKER: Okay.

MR LINDWALL: Just a couple of questions.

MS WALKER: Yes?

MR LINDWALL: You said that the NBN isn't the answer, so what is?

MS WALKER: I don't know. I'm not a technical expert, but I had resonated with - is it Andrew, yes - when Andrew spoke earlier about the fibre issue. I can see the capability for that. We have had businesses in our region, and actually local businesses in our shire, have tried to access the fibre. In our town, it runs through the main street, and we have had local businesses try to access that and tap into ourselves, fund it themselves. They have been declined, both from a local government level, both from a State government level, and also from Telstra. They've basically been told, "No, you can't tap into that network".

MR LINDWALL: So it's not the issue about not willingness to pay for it, it's more that - - -

MS WALKER: No. I think I agree with - I can't remember your name - Jack from Coorow. We will pay. We will happily pay for something like that. I think that is the sentiment in the regions. We are prepared to pay for those services exactly like connecting power or exactly connecting additional utilities.

MR LINDWALL: Yes.

MS WALKER: If we have access to that service and it's consistent, it's affordable, and it will enable us to continue doing our business where we are, I don't want to have to move because the technology lets me down. I don't want to have to relocate my business because the technology lets me down.

MR LINDWALL: Yes.

MS WALKER: I think that there's a number of stakeholders, but I certainly think that Telstra does have the monopoly in the regions and there's a whole other set of issues which, we can take up with Telstra. I do think that the government has a duty of care to

lift the level of access. We need to look at different technologies. We need to look at, possibly, local governments accessing fibre, creating their own hubs. We need to look at what people are doing overseas in remote and rural communities.

NBN is not the answer. Sky Muster certainly is not the answer. I think it needs to be outside the box thinking. We need to look at fibre, look at what's there, look at what we need, as opposed to just one set of parameters around a USO going forward.

MR LINDWALL: Yes. You've mentioned the Mobile Black Spot Program and the concerns about the 3G rather than 4G, so I can understand that.

MS WALKER: Yes. Yes.

MR LINDWALL: It is a bit puzzling why. You wouldn't think it that much more expensive to have 4G over 3G, once you've put the tower in.

MS WALKER: Yes.

MR LINDWALL: But anyway, I don't know about the answer to that.

MS WALKER: Yes. And again, the issue of the maintenance of the towers, because that is an issue in many towns across the wheatbelt.

MR LINDWALL: Yes. Exactly. It's the same as anything, even if you have fibre optic, the battery backup is essential.

MS WALKER: Yes, yes, yes.

MR LINDWALL: Well, is there any final point you'd like to make, Amanda?

MS WALKER: Just the talk of the digital divide. I mean, any number of government reports you read at the moment, they talk about this digital divide. That's applicable across Australia, not just in WA. I think that it's been talked about and it's been talked about. But, I think, the technology is there and I think it's just - I don't know what the answer is, but we need to keep the regions running and to keep business, particularly in the wheatbelt, we need to work on reducing that digital divide.

MR LINDWALL: But, couldn't it be argued, and I'm not trying to defend the NBN here because every infrastructure program has teething problems, maybe they're badly designed, who knows. But couldn't it be argued that it has reduced the digital divide in one sense, because there are 400,000 premises, maybe two per cent of which had ADSL, but the rest had no service at all, no broadband at all, and now they do have something.

MS WALKER: I agree. I think something is better than nothing. The NBN has certainly enabled a lot of people to access a higher quality or even, like you said, they may have had nothing before and it has enabled a lot of people to come online and to progress into that space. But I also think there is a large portion of regions, especially

small towns like where I live - I mean, we've only got a population of 50. We don't have the population that will attract. We're never going to have Vodafone and Optus and Telstra via for our customers. It's not going to happen.

I do think that whilst the NBN has made progress in diminishing that divide, I do think that it's still there. Given the geography, obviously, that's an issue. But, as I said, we're only 150 Ks from Perth and the service that we receive, it's just not acceptable. I would like to see businesses on the fringe of Perth be able to access better quality and more affordable internet access.

MR LINDWALL: Yes. Have you had any issues with, you know how the NBN is based upon a wholesale/retail split, communicating with a retailer? Are you happy with your retailer? You don't have to name it, but I mean - - -

MS WALKER: Well, I am now. But, initially, I experienced a lot of difficulty in getting technicians from that particular retailer to come and, again, do their technical stuff to get us hooked in, because there was two different contractors involved. It took a while. Then there was the billing because we again, we were hooked up for three months. We were billed for three months, but we haven't actually accessed any data usage for three months. So again that's another battle because - - -

MR LINDWALL: Yes, yes.

MS WALKER: It's just challenging and it's frustrating because the technology is there and, I think, it's just a matter of looking for what works for our region. I mean, the Sky Muster is great, if that's your first port of call. But, if you're running a business, I've got five staff who are online, well I just wouldn't - their plans and the data, it just wouldn't work for me anyway. Yes, we just need it to be better. We need it to be better.

MR LINDWALL: Yes, I can understand that.

MS WALKER: Yes.

MR LINDWALL: Would it surprise you that an assumption was made that people who had no access to the internet previously would use the internet less than people who lived in cities? That was the assumption that's been made.

MS WALKER: So people who? I'm sorry?

MR LINDWALL: So the assumption being made, that has been made, the premise behind a lot of the broadband going out into remote and regional areas was that people who have not had the internet previously, would systematically use the internet less than people who have had a long experience to it. Personally, I think that's a strange assumption, because if you haven't had it before, it doesn't give you any evidence of how much you'd want to use it.

MS WALKER: No, no. I think, if you've only just come onto the internet now, I think you need to look around the demographic of that as well.

MR LINDWALL: Yes. Exactly, yes.

MS WALKER: I mean, I'm speaking purely from a business perspective and I think it's been mentioned here today, it's things like business development, it's things like education, it's the E-medicine. It's all those critical services that we - the technology is there to deliver. As in, so E-medicine is there. Distance education is there. Even business development, I mean, we run webinars. We deal all the time globally with people. We hook up with commercial partners in the US. In our global economy, all those things are there. For us, it's having the channels to access them and to deliver them in a consistent way that ensures that they are accurate and are affordable.

MR LINDWALL: One final question and that's about how you've used the service. I mean, you've got the Sky Muster service. You've got mobile phone service. Do you also have a landline or have you given that - - -

MS WALKER: Yes.

MR LINDWALL: You do?

MS WALKER: Yes, I do, yes.

MR LINDWALL: You have all three?

MS WALKER: Yes.

MR LINDWALL: So you're paying for three services, effectively?

MS WALKER: Yes, yes, yes. So you can imagine my monthly data bills.

MR LINDWALL: Yes, yes.

MS WALKER: Yes. We do have. We use the landline. Well, we've got a store based business so we have to have landline.

MR LINDWALL: You have to have it.

MS WALKER: Well, we've got landline at home. Then we've got the satellite broadband at home for our household use, and then we've got mobile data driven internet for our business use.

MR LINDWALL: Yes.

MS WALKER: It's a very expensive way of doing it.

MR LINDWALL: Mobile is, yes.

MS WALKER: But it's the only - - -

MR LINDWALL: It's come down in price, but it's still expensive, yes.

MS WALKER: It has. It has. But we're still paying $169 for 50 gig.

MR LINDWALL: Yes, yes.

MS WALKER: And that's only on one plan. We've got a plan per staff member, because we've got a quota per staff member. It all adds up.

MR LINDWALL: Of course, yes.

MS WALKER: Again, it diminishes into your productivity, but also it's a financial cost to running a business that, if we were a comparable business in an urban area, it wouldn't be an issue.

MR LINDWALL: All right. Well, thank you very much, Amanda.

MS WALKER: Yes. Thank you.

MR LINDWALL: Now, this is an opportunity, if anyone wants to have a brief word before we adjourn. Anyone else want to say anything? Yes?

MR JACK: Do you want me to come up?

MR LINDWALL: You have to come up, yes. Again, go through the process of saying your name, just for the record, so that they - - -

MR JACK: Again, my name is Ted Jack.

MR LINDWALL: Keep it brief, thanks. Yes.

MR JACK: I'm a development officer. Yes. Just something I forgot earlier was the NBN design considerations, that they go through for their service provision, namely when they were came to give the rollout presentation in our local government. We've got three communities, two on the coast, one inland. They went saying, "Yes, you're all getting fibre to the node". They're going, "Wait, except here, you're on satellites". A bit disappointing. But what they said then was, "Any town with under 100 premises will go to Sky Muster". Along the midlands route, for example, not one single town has under 100 premises. You go over one - not one town has under 200 premises for example, all relegated to Sky Muster, because it came down to financial feasibility for them, or return on investment. That's something that, when we're talking about the scope of consequence, that's a huge consequence for a minimal cost saving and that's what it should be seen as.

Like others have said, it shouldn't be seen as a cost. It should be seen as an investment in the regions and there needs to be more enforcement on those design considerations and saying, "Well you're basically not connecting this entire strip of towns because you want to save a buck. It's going against your own design considerations", and that's essentially what they're doing. If they remain unchecked and unregulated like that, that's going to continue on and they're not going to want to further propagate out their fibre connections and everything, because it's going to impose a cost to them that they're unwilling to pay.

That, basically, goes for all telecommunications in the regions who declare roaming. You're going to have increased competition but no - well, there's already a dead market anyway out there. But you can increase competition through your declaring roaming services, but that's not going to encourage any more propagation of coverage because they're going, "Well, everyone can jump on this tower. Why the hell would we want to service anyone else. It's all good". Basically, that's it.

MR LINDWALL: Thank you very much, Ted.

MR JACK: Cool. No worries.

MR LINDWALL: Anyone else? How about we start over here and go - whichever, it doesn't matter. But you'll have to keep it brief.

MS GRIST: Juliet Grist from RDA Wheatbelt. Paul, I just thought I'd comment on the Technology Choice, just a couple of bits of our experience, because you had questions around that.

MR LINDWALL: Yes, yes.

MS GRIST: We have been active in the Technology Choice request. Initially, when Sky Muster went up, no more Technology Choice applications were taken, because "That's it you're serviced". But NBN has been more amenable over time. So we have been working alongside groups of towns and shires to look at the Technology Choice. The process takes an extremely long time, months and months and months. When you get a quote, it is usually with a - it might've taken six months to get this quote and it's 1.5 million plus or minus half a million, and "Pay some more money and we'll get it more refined", because you have to pay, of course, to get to the quote.

MR LINDWALL: Yes, yes.

MS GRIST: We now, after six months of trying, have an agreement with NBN that they will reconsider repurposing the $8000 towards the Technology Choice as a co-contribution to lower the outlay. So if a group of communities want to go fixed wireless, that foregone cost of fixing can be part of that. So it took about six months to agree that, and I think we're about four or five months in the process of waiting for a quote, which

we have still not received. Of course, every month that goes by, people attach to the satellite, because there's no other service.

MR LINDWALL: Yes. Exactly.

MS GRIST: So even though, in theory, it may allow communities to upgrade their service, if they're not satisfied with the minimum required under the satellite, in practice it doesn't actually work that way. So I just wanted to share that experience.

MR LINDWALL: No, I know. Good. That's very much appreciated. Thanks, Juliet. Anyone else? Yes, please?

MR BEBBINGTON: Bruce Bebbington. Five points which have come out from today, one is the 150 gigabyte data limit that NBN imposes is actually a rolling month limit. So if you use 120 in the last few weeks of the month, you only get 30 for the next month, even if you pay for 150. That's what a lot of people aren't aware of.

MR LINDWALL: That's right. You're right. Yes, it is rolling.

MR BEBBINGTON: With the change from ISS to NBN, all data is now incorporated in your plan. So whereas previously your uploads were not part of what you paid for, it is now and particularly impacts on agribusiness where they having big downloads, big uploads of data.

MR LINDWALL: Uploads, yes.

MR BEBBINGTON: All fixed and fibre equipment at their premises have a shelf life of five or seven years. We need now to start working out the processes for the replacement of that, so there's no interruption of services, because there's a 90 day remote area requirement for NBN currently. 90 days, once your modem fails is not acceptable. We also need the processes and to implement the safe guards to do continuity of service.

There is no incentive for NBN to expand the fixed network, as the $9.8 billion that's expected to 2040, is actually subsidised by all active fibre superfast broadband services. Currently the report indicates $6.80 per month per wholesale customer, which has to be added to current fibre plans from July.

Finally, the minimum baseline for satellite fixed and mobile fibre, the benchmarks need setting. It's interesting, the majority of submissions to the draft, and responses, have referred to the serviceability of Sky Muster, it's appropriateness for voice. Most people are expecting that 25 is what they're guaranteed. I think, if the Commission had said, "We suggest a baseline of five for satellite, 25 for mobile, and 50 for fixed", you would've got a significant response, because I think that has not been picked up by people.

MR LINDWALL: No, that's a good point. Thank you. Anyone else?

MR BROWN: Afternoon. Boyd Brown, area manager for Telstra in WA. I've just got two quick points. Gary spoke earlier about fixed wireless NBN and said Telstra didn't have a business product. I just wanted to clear that up, because we do. We launched a product back in May 2016, which is Telstra Business Broadband, which is available on the fixed wireless.

Second point was, Amanda talked about 3G and 4G and 4G not being available on Black Spot sites. That's not correct. The sites are built with both 3G and 4G so they'll operate with 850 and 700 megahertz Spectrum on them. It's right to say though that the sites built under the previous RMCP, the Regional Mobile Communication Program, that was 3G only at those sites. It's not threshold based, it's those sites will be upgraded progressively with 4G. We're at about 60 per cent completion at the moment, with a plan to have those pushed out in the next six months. That's just a rolling upgrade. It'll just upgrade. It's got nothing to do with capacity throughput.

MR LINDWALL: That's great. Thanks.

MR BROWN: Yes, thanks.

MR CRIDDLE: Jamie Criddle, CEO, Shire of Westonia. I just wanted to give a bit of an insight. I'm one of the members of one of the small towns. We have about 150 people in our town.

MR LINDWALL: Yes?

MR CRIDDLE: About 300 in the community. Up until about 18 months ago, we didn't have any internet service. We didn't have mobile service. Basically, you could say that we were cut off, being 50 kilometres from Merredin and 300 Ks from Perth. We've since, 18 months ago, have had part of the first roll out of mobile phone tower put into the town, which has been great, so the 3G service. It has enabled us to, yes, basically, do some extra work.

We had no access really to any internet. We were getting a bounced wireless network bounced, BBNet, I think it was called, which was very unreliable. We were going three weeks without any sort of internet at times, because somewhere along the line there was a tower that was out and, before people could fix it, there was something else going on somewhere else.

With the Sky Muster, we've managed to get on there. Initially, it's been great, I suppose. I'll say that the first 20 days of the first month, it was great, until we used up our data. Basically, we were shaped and are constantly being shaped. I think it was a 50 or a 60 gig plan with 80, I think, on the off-peak.

MR LINDWALL: In the off-peak, yes.

MR CRIDDLE: We've tried to move all our stuff so that all our uploads are done after hours and off-peak.

MR LINDWALL: In the off-peak, yes, yes.

MR CRIDDLE: That's still not really helping a lot. What we've basically had to do is limit people from even uploading, or updating their mobile phones during office hours. You have to go and do that at home. We had an instance where we had a new employee move into a new house, which the shire provided an internet service for them. They just purchased a smart TV, set that up, and used the whole data in the first day setting up the TV.

They're small things, but being able to say - you know, we were talking about Netflix and whatever else. I have a small family which talk to their cousins in Perth and they talk about what they've been doing and whether it be watching, yes, something on Netflix, and my kids ask me, "What is Netflix?"

MR LINDWALL: Yes, yes.

MR CRIDDLE: To me, that's unacceptable. For a divide of 300 kilometres from Perth, it is unacceptable and it's almost to the point of third world. In terms of how we go from here, I love the ideas that have been going around. Whether they get traction or not, that's from here on and further pushing, I suppose, down the line.

But we heard earlier about the digital divide, whether the NBN has been able to close that. All I think it's really done is given people in the rural areas a false hope. We talked about the people that have been able to get on and use the internet, yes, that's been great. But the frustrations involved with it all is just too overwhelming and all it is, is setting up this false hope of, "Yes, we've got internet but we just can't use it". I just thought I'd give a bit of an insight.

MR LINDWALL: No, no, that's great. Yes.

MR CRIDDLE: We're probably one of the smaller communities in WA. Yes, I just thought that would be, yes, interesting for - - -

MR LINDWALL: No. We will look at some of the ideas that have been raised today.

MR CRIDDLE: Yes. Thank you.

MR LINDWALL: Anyone else? Well, that concludes it. I adjourn the proceedings. This is the last hearing for this inquiry. I think I mentioned earlier that we'll present the final report in late April to the government and then they have 25 sitting days to table it. You can still put in submissions, if you wish, if you want to clarify anything more and thank you very much for your participation. Have a great afternoon.

ADJOURNED AT 1.09 PM