Australian Government
Productivity Commission

PRODUCTIVITY COMMISSION

INQUIRY INTO THE TELECOMMUNICATIONS UNIVERSAL SERVICE OBLIGATION

MR P LINDWALL, Presiding Commissioner

TRANSCRIPT OF PROCEEDINGS

AT MELBOURNE
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MR LINDWALL: Good morning, everyone. I might - we've got some introductory remarks that we have to always use, apparently, so I'll go through this and then we'll get started, if everyone's happy with that, and it's relatively informal so we'll do our best.

So good morning. Welcome to the public hearings of - I should have asked you. You're off? You're going? Good morning. Welcome to the public hearings for the Productivity Commission inquiry into the Telecommunications Universal Service Obligation. I am Paul Lindwall and I am the Commissioner on the inquiry.

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 USO 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 after its release. We have talked to a range of organisations and individuals with interest in the issues. We then released a draft report in December, and have received further submissions, including - they're still flowing in, as far as I understand.

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 the public hearings is to facilitate public scrutiny of the Commission's work in its draft report and to get comment and feedback on the draft report. Following this hearing, we are also holding hearings in Port Augusta and Perth. We will then be working towards completing a final report to be provided to the Australian Government in April. Participants and those who have registered their interest in this inquiry will automatically be advised of the report's release by the 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 you 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 have an opportunity to come forward and make a brief presentation.

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

The transcript will be made available and on our website following the hearings, about two weeks, I think, maybe a bit less. Submissions are also available on our website.

For any media representatives attending today, some general rules apply. Please see Ish or Jane if you wish to, or any of our other staff, and a set of the rules that apply to media.

To require with the requirements of the Commonwealth Occupational Health and Safety Legislation, you are advised that in the unlikely event of an emergency requiring the evacuation of the building you should follow the green exit signs to the nearest stairwell. Lifts are not to be used. Please follow the instructions of the floor wardens at all times.

If you believe you will be unable to walk down the stairs, it's important that you advise the wardens, who will make alternative arrangements for you. Unless otherwise advised, the Assembly point for the Commission in Melbourne is at Enterprise Park, situated at the end of William Street, on the bank of the Yarra River.

Participants are invited to make brief opening remarks, and then we'll have questions and answers as we. And I'd like now to invite Mark Gregory to appear, and Mark, if you like, if you just state your name for the record and then give a bit of an introduction.

MR GREGORY: Do you want me to sit?

MR LINDWALL: No, over here, sorry.

MR GREGORY: Thanks. Yes, it's good to see you again too. Hello.

MR LINDWALL: They don't amplify, they just record.

MR GREGORY: No, I'm just making sure. Hello. My name is Mark Gregory. I am an associate professor at RMIT University, and I am an expert in the area of access networks and have spent nearly 30 years now working on systems that would be complementary to the Universal Service Obligation, and have a particular interest in ensuring that any future outcome for the USO is an improvement and not a retrograde step.

So I've put in two submissions now, one prior to the draft report, one after the draft report. My key concerns are that any transition to a new Universal Service Obligation from the existing situation needs to take into account the reason why the existing situation was put in place in 2012 was that there was a realisation at that time that there was the potential for the NBN not to be able to satisfy the needs of the Universal Service Obligation, particularly in rural and remote Australia.

And several times now over the past couple of years, the CEO of NBN Co, Mr Bill Morrow, has stated publicly, including in the Senate Estimates, that the NBN is not satisfactory for the Universal Service Obligation. And I just want to draw the point to that, in that the draft report makes a number of mistakes in regards to the NBN and the potential for the NBN to be utilised for the Universal Service Obligation.

Technically the NBN is an inferior solution, even for its intended purpose, and the NBN is not satisfactory, technically, for the Universal Service Obligation, and it is my great concern that the final report is going to recommend that the NBN be utilised for the Universal Service Obligation without any regard to the technical requirements to meet the services that are required under the Universal Service Obligation.

The only way forward, if the NBN is to be used for the Universal Service Obligation, is for performance to be degraded, and that is that we will go to a solution which is prior to 1950 in technical performance, and it would be something remarkable for the Productivity Commission to recommend, that we go back 60 years. I find the draft report to be quite remarkable in its naivety about the NBN.

So some other remarks that I'd just like to make around that is that the 21st Century Universal Service Obligation has got to be one that provides universal access to services that Australians need, irrespective of where they live and work. In particular, I am concerned that there has not been enough attention paid to universal access for people who are homeless, people who are itinerant. Australia has a large itinerant workforce that are not given enough attention, except when there is talk of taxing the youth that come into Australia to pick fruit and do other jobs that are absolutely necessary for the economy and the productivity of the nation.

And these people also need access to these services, and yet many of them can't get that access, so we're asking them to do jobs which many Australians won't do, and yet we're treating them as inferior people, or people that we don't really care about.

So universal access is a critical and vital component of any future US, in that we need to take into account the socially disadvantaged. We need to take into account the itinerant workers, which play a vital part to our economy. By itinerant workers, I also include in that people that work on boats, fishing and doing other jobs on boats, and also people that are in mobility roles such as transport and so on. You know, there's not been enough attention paid to people in these areas.

So universal access to the service is vital, and in today's environment there's no reason why especially the socially disadvantaged can't be provided with the means to access telecommunications and broadband, and that service provision be subsidised or made free, depending upon social means.

The cost is marginal compared with the benefits to government and to business, because of the data that's collected and the information that's provided about where services are required, and also bringing those people back into society. This is a way of doing it.

An anecdote that I was told - and I've also had this told to me by several different people - is that homeless people, when they are forced to move or for whatever reason they lose their camp of where they're living, the one thing that they will keep with them is their mobile phone, whether it be wireless or mobile provided through a service subsidy or a community service, that's the one thing they will not lose. They will get to the end

of the earth to get that mobile phone, because that's their way of connecting with friends, family and, you know, people in their lives.

And so we need to take that into account. We are not doing enough for the disadvantaged, and the USO needs to step up to that. It's one thing to provide infrastructure, but there's no point if you can't afford it. Having infrastructure is pointless if you can't afford the service.

I'll go back again to my technical performance concerns about any future USO, in that just because the current government sets the bar low in terms of performance for the National Broadband Network there is no requirement for the Productivity Commission to subsequently adopt such a low horizon.

In terms of provision of broadband data, it is a no brainer that the USO should include broadband in today's world, so the transition to broadband is something that needs to be considered carefully, particularly for people in regional and remote Australia.

Now, realistically in today's environment what the Canadians recently did with their USO is something that needs to be looked at very carefully, in that they set the minimum download of 50 megabits a second for all Canadians.

Now, I'll just translate that onto the NBN for a second, and also onto mobile cellular carriers who have spent an inordinate amount of energy publicising their wares for the USO. The problem with copper-based solutions and also anything that's wireless is that it degrades over distance, and so therefore if the USO is going to be utilised by either of these means, then the minimum service requirements, the minimum service performance that has been set, needs to be set for the person at the end of the line.

So if a particular performance is set for telephony, then that performance needs to be tested and set for the worst possible case scenario. If that performance requirement is set for mobile wireless or mobile cellular, if that is to be included in the USO, then that performance requirement has to be set for the worst possible situation, and that is someone that exists or lives or works on the very margin of a mobile cellular cell, not someone standing next to the access point.

This is a vital point in terms of the argument about using mobile cellular and other means, other technologies, in terms of the USO. So the testing that was done for the original USO and the performance standards that were set were set based upon the fact that there was minimum requirements in terms of mean opinion score over copper-based services.

Now, if we're going to go away from the test sets, the test requirements, the performance requirements that we had when the USO was put in place to something based upon the NBN or something that is based upon mobile cellular networks, then equally we need to set performance requirements, but for the worst-case scenario.

If we set generalised performance requirements, then that means that there will be a large percentage, possibly 25 or 30 per cent or people, that will get a substandard or degraded service, or an unworkable service, under which circumstances the USO has lost its point and, you know, will have done Australia a disservice by implementing a USO of that variety.

So I'd just like to conclude by saying that my opinion of the draft report was that in areas of economic need, in areas of performance, in areas of improving outcomes, in areas of adding broadband data to the USO, I am in total agreement. I have great concerns about performance requirements, any indication that the NBN can be used for the USO. The NBN could only be used for the USO if there is a stipulation as to the performance requirements that the NBN is to provide.

Similarly, I have grave concerns about mobile cellular being used for the USO unless, again, there is a minimum performance requirement set in stone before mobile cellular is allowed to be used for the USO, otherwise we will end up with a situation which is pointless. Thank you.

MR LINDWALL: Well, thank you for that, Mark. Could I ask about - I mean, you said - maybe that was a rhetorical flourish, but that we're going to send it back to the 1950s, but in the 1950s people had party lines. We have never said that we should go back to voice only. We have said that it should have data. I mean, there was no such thing as data in the 50s, so I'm not quite sure where we're saying that we're going back to an inferior system.

MR GREGORY: The point that I'm trying to make is that mobile cellular is fraught with problems. You have drop-outs, you have degraded service as you move away from access points. There are many people that I know that report to me on a regular basis that their mobile cellular - they're told by the company that it's absolutely fine, and yet it's completely unworkable where they live.

So what I'm saying is that one of the things that they did when they set the USO in place, and that had occurred when we upgraded the telephony standards in the 70s, was that we provided, like, a line in the sand saying that these are the minimum performance requirements.

Now, Telstra has a very, very good record, an internationally renowned record for meeting those standards. What I am suggesting is that it's a very fine line, and it's highly possible that changes to that fine line mean that we're going to have 25 to 30 per cent of Australians fall over the line and end up with a technically inferior service that would be no better than what they got for voice or data, if you consider it from a comparative analysis point of view, from the 1950s or before.

MR LINDWALL: But the current USO, to be quite clear, is about fixed line voice to the home premises - - -

MR GREGORY: Yes.

MR LINDWALL: - - - as well as payphones, so anything that's beyond - so really you have to compare, surely, a proposal to what the existing state of the nation is, which is that it's fixed line to the premises, and then you have to ask yourself, for voice, what is inferior about voice if we have NBN reliance in the 97 per cent of premises that are covered by a fixed line or fixed wireless?

MR GREGORY: For voice, in terms of the NBN, I think that you'll find that there's a large percentage of people that are actually ending up with a degraded service. I mean, you would have seen the remarks by Telstra CEO Andy Penn last week, where he said that Telstra is going to start publishing the performance data, simply because what people are being told by NBN is not what's happening in reality.

What I'm suggesting is that the Productivity Commission needs to be aware, or make itself aware, that there's, to use the parlance of the day, a huge number of alternative facts being pushed by NBN Co management.

MR LINDWALL: I'm not here to defend the NBN, but wouldn't they argue something like that it's a work in progress, and that really it shouldn't be - that until it's been fully rolled out it's a bit difficult to judge the performance standards?

MR GREGORY: Even where they've rolled it out, the performance is not meeting what they're saying.

MR LINDWALL: But isn't it sufficient for voice, though? I mean, I have an NBN connection at my home. It's fibre to the node, so it's copper as you suggest, and I get about 12 to 16 megabits a second. I'd like to get more, but that's what it is, but the voice quality is perfect. I wouldn't complain about the voice. You only need about 150 kilobits a second for voice, surely?

MR GREGORY: Okay, so I'll say two things in regards to that. One is that that wouldn't meet the Canadian USO requirements, would it?

MR LINDWALL: What, 12 to 16 wouldn't?

MR GREGORY: No, because they've set it at 50 megabits per second.

MR LINDWALL: But I don't think they've achieved it yet, though.

MR GREGORY: You know? No - - -

MR LINDWALL: That's an objective.

MR GREGORY: But they're setting it as the stone, the line in the sand.

MR LINDWALL: But isn't ours 25 megabits a second with a longer-term objective of 50?

MR GREGORY: No, it's - if you look carefully, they have withdrawn that - that statement. In fact, they've withdrawn any statement about performance at all, right? The government and everyone else have done complete backflips and quietly pushed that off to the side.

MR LINDWALL: So you - - -

MR GREGORY: There are people that will get, with fibre to the node, 12 slash 1, or whatever, and they're not really going to get anything better than that.

MR LINDWALL: But it's still enough for voice, though, isn't it?

MR GREGORY: In terms of the voice, again, there is a percentage that have got very bad voice. One of the things at least with Telstra in the USO was that you could ask Telstra to fix the service, and they would do so. Currently there is no requirement on NBN Co to do that.

MR LINDWALL: Yes. Well, what do you think about the legislation that's out for comment at the moment about statutory infrastructure provision, which is along the lines of what you're suggesting, surely?

MR GREGORY: Again, there's, you know, this blank statement in there about performance. It's one thing to provide infrastructure, it's another thing to actually provide infrastructure which meets a technical performance requirement, and the problem that we have right now is that there's just a void when it comes to performance.

And yet, all through my life, and when I read back through the generation before me, it was all about performance. It was all about meeting certain performance for communications and telephony and so forth and bringing the performance up to this minimum standard. And yet today, in Australia, we're backsliding on performance.

MR LINDWALL: I mean - - -

MR GREGORY: Let me just talk about the data for a second. Again, the problem with the data is that the data connectivity and the data transmission performance degrades over distance with copper and mobile cellular or wireless, any sort of wireless, right? Now, there is no line in the sand saying what the minimum performance is to be, even for the NBN. What I'm saying is that the Productivity Commission is setting the scenario without saying that there needs to be minimum performance requirements as a recommendation of the report. It's setting a situation where, yes, people will get infrastructure, but it will be hopelessly bad.

Now, that number, that percentage - say for example that percentage is what we're seeing with service class zero and the NBN and other problems, about 15 per cent. Well, that's the whole regional and remote Australia. So essentially we're setting ourselves for

a scenario where a great slab of Australia is going to get a third-world technical solution. Right?

We have to be very careful not to do that. What I'm suggesting is that we need to take the technical performance requirements that have been developed over 50 years, and any future USO needs to have those performance requirements, the technical performance requirements, set in stone, because otherwise we're opening the door for a sub-standard solution.

Now, the NBN is a point in case. It is a perfect example of how a good idea has turned into a disaster because of a government coming in and downgrading everything to the point where the only people that don't recognise that it's a third-world solution is the current government.

MR LINDWALL: But wouldn't the argument be that yes, fibre to the premises would be a better solution in the alternate, but it's slower to roll out and therefore more people are enjoying faster internet now because of the multi-technology mix, and ultimately over time they'll be phased into whatever the solution might be in 20 years' time, I don't know, but it could be - who knows? But hasn't it accelerated the rollout of the NBN?

MR GREGORY: No, not at all. Because they renegotiated with Telstra for 18 months, and then they had to re-gear and change all of their production systems. You know, the former CEO of NBN Co has showed quite categorically - and from my experience I totally agree that both approaches, fibre to the premises and fibre to the node, would have finished about the same time, in 2020, 2021.

Both approaches would have cost about the same. We're seeing cost blowouts with the fibre to the node left, right and centre. Originally the government was going to do it for 29.5, then they were going to do it for 43. We're already up to 50. If you check the media release, carefully, if you check everything that's been said by the government ministers carefully, you will see no statement that the 49 billion that they've given to NBN Co so far is the final amount they're going to give.

MR LINDWALL: But that doesn't prove the alternative, that a full FTTP would have achieved at that less cost. I'm not sure that - - -

MR GREGORY: The costings were in. But we can look at the evidence, and there is international evidence available for us. New Zealand. Their costings have decreased for the fibre to the premises rollout in line with the predictions that were made by NBN Co in 2010 here. They have mirrored each other. The actual costings of a real rollout in New Zealand have mirrored what was predicted in Australia and was holding true up until September 2013. So it's not a prediction. It's not fantasy. It's fact.

MR LINDWALL: But anyway, isn't this getting slightly aside from the point here, which is that we have currently a Universal Service Obligation, voice to the premises, and we're now considering what we should do as an alternative, and we've said that - well, the government has made a major investment in the NBN, and you can argue whether

they've done a good job or not. You know, any infrastructure project has proponents and opponents about its structure and the way it's been rolled out, but nonetheless it's better than what we had before, one would argue.

I mean, surely we're getting data when previously there was only voice, so - and in the Commission's proposal you do have data. We're not saying that mobile phones are a USO. We're saying that as a complement, that it adds serviceability to the USO, and we've also moved away from calling it a USO to more of a targeted approach based upon those criteria of availability, affordability and accessibility.

MR GREGORY: Yes, but the one thing that always must be included in there is performance, and I don't see sufficient attention to that in the report.

MR LINDWALL: Would 25 megabits a second be a reasonable baseline?

MR GREGORY: No. I don't see why do we have to be less than Canada?

MR LINDWALL: But most people, from my understanding, who have fibre to the premises, choose to buy only 25 megabits.

MR GREGORY: Only because of the failed business plan of NBN Co. In New Zealand - - -

MR LINDWALL: But it's up to their retailer to provide something - - -

MR GREGORY: In New Zealand 70 per cent are selecting 100/40, because they've got a business plan that works. In Australia, like everything else this government's done with the NBN, the business plan is a failure.

MR LINDWALL: But people have a choice of choosing 12, 25, 50, 100 and other things, and they choose what they will. Surely that's revealed preference?

MR GREGORY: Because of cost.

MR LINDWALL: Yes.

MR GREGORY: Yes.

MR LINDWALL: But isn't that reasonable?

MR GREGORY: So - but the USO should have no - should not - that should not be the major concern.

MR LINDWALL: So we should provide 100 megabits a second to people even if they don't want it?

MR GREGORY: No, it's not a matter of "don't want it". If the cost was right, they would all have it. New Zealand is a perfect example of that, and countries like Portugal and so forth in Europe.

My point is, is that we should not be looking at less than Canada, in what Canada has set.

MR LINDWALL: But Canada hasn't got 50 megabits a second.

MR GREGORY: No, they've set it as what they're going to do.

MR LINDWALL: It's an objective. Well, that's right.

MR GREGORY: Because they're just about - - -

MR LINDWALL: People make promises. It doesn't necessarily mean it will be achieved.

MR GREGORY: Politicians do that. But they are just about to start a process of building an NBN.

MR LINDWALL: I'm not entirely - I don't see what the difference is. We have an objective here in Australia with the NBN of 25 megabits a second, and you could argue whether that's sufficient, but that's what an objective is. That's been stated by our Communication Minister and others, and then Canada's got another objective. But neither of them have been achieved in full yet.

MR GREGORY: But the previous government's objective was 100/40 for everyone. So this government will be gone in a couple of years' time. So do we not have this report wait until the new government, see what they set the objective for the NBN as, which will be higher than 25, and then publish the report then?

MR LINDWALL: So what do we do if we had a USO for the whole of every - I mean, I assume that you still agree that it should be premises-based, and not geographically based? In other words, the coverage of the mobile phone network with Telstra is about 30 - or just under 30 per cent geographic area of Australia.

Some people have argued that a USO should include the entire - well, mobile should have 100 per cent coverage of geographical area of Australia. That would be quite expensive, wouldn't it?

MR GREGORY: Yes, I'm not proposing that - again, I'm saying that we need to be very careful about including mobile cellular in the USO, right, because of coverage and performance.

MR LINDWALL: So you're still happy with the premises-based nature of the service obligation?

MR GREGORY: Except that I believe the term premise - - -

MR LINDWALL: You did mention about - you know, by people who are itinerant or so forth?

MR GREGORY: Yes, I believe that the term premise needs to be extended to include homeless and itinerant.

MR LINDWALL: So how would you define it if it's not premises then?

MR GREGORY: Well, I consider that they have a premise. In terms of the homeless, that they tend to stay in one location for weeks at a time, and then they move to another location, so in a way they're sort of like a semi - they are, in a way, itinerant. I believe that we need to include a flexible definition of the term premises to account for people who are socially disadvantaged and itinerant workers.

We have people in Australia who move around all year in a circle type of thing, you know? They don't have a premise, you know. Also we have to be careful about the term premise in terms of caravans and mobile homes and so forth, because a lot of itinerant workers use mobile homes now, or caravans and so forth, and you know, so I'm saying that we need to do that.

I'm not saying that they need to be satisfied by mobile cellular. I'm saying that we need to define premise in terms of all Australians so that we capture everyone, whereas the previous definition didn't.

MR LINDWALL: But surely the objective of 100/40, like you're mentioning, never was meant to apply to 100 per cent of premises, though?

MR GREGORY: No, that's right.

MR LINDWALL: About 93 per cent, if I'm not mistaken, by the old scheme, so - - -

MR GREGORY: Yes, and I'm not suggesting 100/40 needs to be the line in the sand. What I believe is that a USO needs to set a reasonable line in the sand, and I believe that that needs to be determined, you know, after it's reviewed.

My problem is, is that if we set this, for example, with broadband low, without any rationale as to why it's set low, 25/5, we need to also consider the amount of data that's needed by people in an average month, and we're already seeing people in the bush screaming about the data that they're getting over the satellites is not being enough, right?

MR LINDWALL: Could we talk about that, then, about how would you solve that issue?

MR GREGORY: I've said it many times. Put a third satellite up. The new satellites give you twice as much capacity as each of the existing Sky Musters, right? So because we - the technology is doubling every five years, so if we were to order a satellite today, in five years from now when the satellite goes up we would instantly have two Sky Musters in one satellite for the same cost.

So in any program, we need to be building ahead. Satellites only have a 15 year life, which means that essentially 10 years from now if we don't order another satellite then those two satellites are going to come down and we're going to have no satellites. So we need to be essentially ordering the next iteration of satellites now, to take into account the fact that people need more data.

MR LINDWALL: So could I ask about funding then? Because all of these solutions, once you start - a baseline to me is something that's a minimum, right? And once you start increasing the minimum, it involves extra cost, doesn't it, by definition?

MR GREGORY: Yes.

MR LINDWALL: So how should we fund the Universal Service Obligation issue?

MR GREGORY: Well, as I put in my original submission, we need to broaden the base, in that it is unreasonable to just, in today's environment, especially as broadband is brought into this, it is unreasonable to only levy Australian telecommunication companies. We need to broaden the base to include a levy on multinational companies providing services over that infrastructure.

MR LINDWALL: These are over-the-top providers?

MR GREGORY: Absolutely.

MR LINDWALL: Such as Google and so on?

MR GREGORY: Netflix.

MR LINDWALL: Netflix.

MR GREGORY: Everyone keeps saying that Netflix is the major beneficiary of the NBN, so there's no reason at all - - -

MR LINDWALL: I've been informed that it might be difficult to levy some of these providers.

MR GREGORY: Then just simply block them.

MR LINDWALL: Can you block them?

MR GREGORY: Absolutely. I can do it no problems at all.

MR LINDWALL: Because people can't get around it by using a VPN?

MR GREGORY: They can get around it by using a VPN, but you know, there are ways and means to block companies that haven't been thought of in terms of the way that this government's gone about it.

MR LINDWALL: What about direct funding by the government, which is something we mentioned in our report, as an alternative?

MR GREGORY: The problem is, is that the government is being - the government or the industry is then being left to carry the can. Part of the major beneficiaries of the NBN are the international multinationals, so therefore more needs to be done to (a) collect tax from these companies, and (b) to get them to subsidise or be a participant to subsidise the USO.

I mean, I strongly agree with the argument from the industry that it is unfair for the industry to be left carrying the can, because it's the over the top providers - and they can't actually say to them, "Well, 80 per cent of the traffic is coming from you, therefore you need to pay something to us as the telco." They have a similar problem getting money out of them.

MR LINDWALL: So I understand that 50 per cent of the data being used in the world at the moment is due to Netflix and YouTube. That's what someone told me.

MR GREGORY: Yes.

MR LINDWALL: So would you, what, charge these providers by the megabyte or something like that?

MR GREGORY: You would work out a charge based on not just volume but value, because sometimes volume does not have - - -

MR LINDWALL: That's true, yes.

MR GREGORY: - - - equivalent value. So the way I would do it is to work it out based on volume and value of the service provided, and I don't see any reason at all why the large multinationals in this scenario can't contribute. Because if you look at the bottom line, they are making absolutely billions out of this country.

MR LINDWALL: Could I ask your view about the Mobile Black Spot Program?

MR GREGORY: I think that the program is better than where we were. The problem with the Mobile Black Spot Program is that there needs to be a broader effort made to ensure that any infrastructure that's installed is equally able to be used by all the mobile cellular companies.

There are two issues that are happening. One is that the states are still off doing their own thing, whereas, like, you know, Western Australia recently gave a large handout to one company and effectively the other two companies are shut out. They can't even access the infrastructure.

The other issue, of course, and it's a perennial issue that's also tied into one of the major issues with the NBN, and that is the backhaul. We're paying probably one of the highest rates for backhaul in the world, in Australia. The ACCC has addressed the problem a little bit, not enough. So therefore it's one thing to put in a mobile cellular tower under the Black Spot Program, but then some of the companies may not be able to utilise that tower because they're hit with a backhaul cost which is, you know, uneconomic.

In my view, which of course is a different inquiry, there is an overwhelming argument for mobile broadband roaming in Australia, now. Not permanently, but for a number of years, because in some areas one tower with one set of equipment on that tower to handle customers in that particular area is all that you need, right?

MR LINDWALL: Yes.

MR GREGORY: You know? There's no need for three companies to put three sets of equipment on that tower to service the customers, right? It's just uneconomic to do that, and we're essentially in a silly scenario which we all argued about 10 years ago where we're seeing three towers being put side by side on ever hill in Australia because there wasn't infrastructure sharing. And we're slowly getting rid of that problem, but we're still seeing the problem occurring with the Mobile Black Spot Program because of the backhaul costs.

But we're also seeing it where the argument is quite valid, that the actual locations that are being selected for these sites could be improved, and I think that there's a strong argument that there's - you know, there's a need for that program to be independently managed.

Now, it also needs to bring the states into it, because there's no point having that program if the states are then going off giving money to one company, and I don't think people realise the amount of money that had been given by the states to one company to build access points and towers and all sorts of things. So the Mobile Black Spot Program is a step in the right direction, but it's still got a long way to go.

MR LINDWALL: Okay. Look, I'm mindful of the time - - -

MR GREGORY: Yes, sure.

MR LINDWALL: - - - so did you have any final comments you'd like to make?

MR GREGORY: I think just a final comment, I'd like to reiterate that to change the USO without a focus on performance would be wrong, and I strongly agree with Telstra's

submission that their major concern is that by trying to renegotiate or change the USO, that there will be a degradation in the service that's provided to customers.

Irrespective of what people think about the existing USO - and I've argued that it needs to change - I'm very, very concerned that people have taken this need to change and immediately taken it as being, "Let's save some money and give everyone a sub-standard inferior performance solution," under which circumstances then I strongly agree with Telstra that - you know, that the exercise could become fruitless.

MR LINDWALL: Okay. Well, thanks very much for appearing then, Mark.

MR GREGORY: My pleasure, thank you.

MR LINDWALL: So I'll now invite - is it Melanie Gordon from the Victorian Farmers' Federation? Hello, nice to see - - -

MS GORDON: Brett (indistinct).

MR LINDWALL: Yes, please. Just introduce yourselves and then give a statement. That would be perfect.

MR HOSKING: Sure. Okay. Yes, Brett Hosking. I'm Vice President of the Victorian Farmers' Federation, and Melanie Gordon, our policy officer. I guess we're here, you know, in the response to the inquiry, to look at what is probably the biggest concern that our members and the communities they live in face.

Whenever we travel out to rural areas, it's the number one thing that's talked to us about is mobile connectivity and access to data and the internet. We're moving very rapidly into a more technological era, and there's a lot of opportunities there for agriculture to improve our - excuse me, our productivity, our sustainability, our efficiency, and the opportunities that we have in agriculture, but we're currently in a situation where we're very heavily limited by our access to connectivity and data, so I guess in response to the inquiry, we've advocated quite strongly for a technology-neutral USO that covers, you know, voice communication as well as data.

Do you have anything to add, Mel?

MS GORDON: I think that's everything.

MR LINDWALL: Okay.

MS GORDON: A high-level view of it, yes.

MR LINDWALL: Well, thank you. The current USO, of course, is about voice, as I said previously, and anything would be different to that once it adds data. The VFF - I understand - effectively you think that mobile should be part of a USO, is that - because it's currently based on premises delivery, not - - -

MR HOSKING: Yes.

MR LINDWALL: - - - geographic area. That's a big change if we went not only from voice to data but also to having it available everywhere.

MR HOSKING: Yes. We think certainly - certainly data should be part of it, without a doubt. We have - I mean, we've moved into that part of the world now where data is part of everyday lives. One of the challenges that we have as farmers and living in rural communities is that we don't work from home. We work in a paddock where we're surrounded by trees and, you know, very little access to technology, so often what we're seeing now with our mobile phones and our equipment and GPS and that sort of technology, I think there's scope there in the future. I think at the moment the infrastructure doesn't support extending the USO across, you know, all mobile areas.

So I think whilst it's a very ambitious goal, I don't think it's achievable in the short-term. There's a lot more work and investment needs to be done to achieve that.

MR LINDWALL: Now, the NBN - and we've heard differing views on that, but the NBN has an objective to provide broadband to the premises for 99 - sorry, 97 per cent of the premises in Australia via either fixed line or fixed wireless, and for the remaining 3 per cent by satellite. I assume that your members that are in the satellite coverage are the ones that are more likely to be concerned, because from what I've heard in other hearings people with fixed wireless or fixed line generally are pretty happy with their service, notwithstanding whether it be fibre to the node or fibre to the premises, but nonetheless they're getting a pretty good service out of that.

MR HOSKING: Yes. Yes, and you're right, our membership makes up the 3 per cent pretty much exclusively, which is not a great honour in a way. I guess, yes, look, we are hearing - and anecdotally we're certainly hearing good things about the fixed wireless.

We have very few of our members that are on the wireless - sorry, the fibre to the home. What we are hearing about satellite is that, to put it bluntly, it kind of fails the pub test. When people go and they talk about it, they're talking about drop outs, they're talking about unreliability, and I guess if we wanted to set a benchmark for what data connectivity looks like in Australia, it would be terrible to think that a certain - depending on geographically where you live, that your entitlement to that technology is considered far less than the other 97 per cent of Australians.

So I think we need a technology solution that doesn't drop out, that is reliable, and that does provide - - -

MR LINDWALL: So what's the alternative to satellite? I mean, a large investment's been placed in satellite, and I think there's an argument, and maybe it has merit, that there's some teething problems at the moment, because the second satellite was only relatively recently introduced - launched, and it takes a while to get it positioned.

Maybe some of the concerns are just about that, rather than the long-term serviceability of the satellite.

MR HOSKING: Yes. Yes, look, I'm hopeful. I'm hopeful on behalf of our membership that the satellite problems are resolved. At the moment they're not. At the moment, as I said, it's failing the pub test. I guess in terms of, you know, we've surveyed our members on all things, on mobile telecommunications but also their access to data and what they use.

Roughly half of our members at the moment have not switched to NBN. They're using the wireless technology through your mobile phone, like your data and - they're finding that a more - - -

MR LINDWALL: So they're obviously within the mobile phone coverage zone?

MR HOSKING: Yes, they're finding that a more reliable service than the NBN satellite at this point in time. As I said, I'm hopeful that it changes, but you know, that's the hope, that's not specific.

MR LINDWALL: How will they know when it's - if you're relying on your mobile and there's a satellite service available but you're waiting for it to improve, how will those members know when it's time to sign up or not?

MR HOSKING: Yes, yes. Well, we have seen the rollout of NBN satellite in most areas of Victoria now, so the - it's one of those things, you always have those early adopters, and those guys that have got in early are the ones that are telling us that it's unreliable. And until they start changing those conversations, then you're not going to see a shift to a newer technology. When people have a service that works, then why change to one that - what they're being told is it doesn't work.

MR LINDWALL: Yes. When you say it's unreliable, what type of things are your members saying about the unreliability?

MR HOSKING: Yes, we were speaking with one on Friday from Manangatang, up in northern Victorian, and they access their data through the NBN satellite, and she said it is quite frequently - the example she gave was online banking, doing online banking, and it's regularly dropping in and out, and so it's a matter of sitting there, waiting for it to reconnect and continue on with what you're doing, so from an operating the business point of view, that's unacceptable.

MS GORDON: And similarly that same member, she was actually conducting a census report for the Bureau of Stats as well, and going through the process got halfway through, the whole thing dropped out and had to start again, so I guess the government platforms which are being used just aren't being picked up by some people in these areas.

MR LINDWALL: So this is not a latency issue, then, in that case, is it?

MR HOSKING: She described it as a drop-out, yes.

MR LINDWALL: And I mean, obviously - the NBN satellites are more affected, is my understanding, for rain fade than, say, the USO satellite, which some of your members may use, I'm not sure. But Victoria's not one that I would have thought would be so affected as, say, up north in Queensland by cyclones and other things, which are more likely to affect satellites. So I'm surprised about why are there drop outs. What does the NBN or the retailer say to your members about why it's dropping out?

MR HOSKING: I think it's an issue with the satellite technology at the moment. I think, you know, cloudy overcast weather certainly seems to have an impact. You know, in terms of the cause of it, you know, I'm not really qualified to give that answer, but I assume it's something that NBN are aware of and would be working to address, but at the moment it's not - well, as of Friday it's not addressed at Manangatang, so - - -

MR LINDWALL: Thank you. Yes. What do you think the appropriate way of funding a Universal Service Obligation - at the moment, you know, it's funded on some of the carriers under a telecommunications industry levy, and the government has released a regional broadband initiative which it's looking at funding the NBN in a slightly different way. Do you have any comments on those?

MR HOSKING: Look, I don't think we have a strong view, other than that we don't see any reason to - you know, if you've got an existing funding source there, you know, that could be used to improve connectivity and to ensure connectivity across Australia, why take it away? Why not continue to use it, you know, more creatively and more ambitiously to fix those coverage gaps?

MS GORDON: And I guess following on from that, with looking at an industry-type level when we've responded to the ACCC inquiry into inter-carrier roaming, which I understand is outside your scope, but we've looked at the USO industry levy model as something that could potentially be picked up and adopted into the inter-carrier roaming space as well, to be able to encourage, I guess, longer-term investment into, for us in particular, mobile black spots.

MR LINDWALL: We may as - while you're talking about mobile black spots, would you like to talk about that program and what you like about it and what you don't like about it, and how it could be improved, or how many more rounds you think there should be?

MR HOSKING: Yes. Well, as Mel alluded to, we have advocated for inter-carrier roaming - - -

MR LINDWALL: Yes.

MR HOSKING: - - - because one of the challenges we face in rural Victoria, or rural Australia in general, is that we - the infrastructure requirements that we face are enormous, and I guess to rely on any one carrier or provider to service all those

infrastructure requirements isn't possible, so without sharing of that infrastructure, so we've advocated very strongly for that.

In relation to the Mobile Black Spot Program, we're very supportive of it, and it has made a big difference in some areas, but the task is bigger than the funds that have been allocated to it, and so, you know, until we get to a point when I go out to a hall and - we keep saying Manangatang, if I go out to Manangatang or to Ultima or some of these place in rural Victoria and all of a sudden the growers aren't telling me about telecommunications - - -

(Mobile phone ringing.)

MR LINDWALL: Sorry about that.

MR HOSKING: Sorry?

MR LINDWALL: Should have turned off my own mobile phone. Continue. Sorry.

MR HOSKING: Yes, no, you're right, Paul. Until we reach a point that they're not telling me that telecommunications are their biggest challenge, then, you know, more needs to be done in that program.

MS GORDON: And I think particularly what we're seeing with - while we have a reasonable overall coverage of mobile connectivity in Victoria, it's that ongoing reliability that our farmers have challenges with. So if there's - particularly over summer holidays and school holidays is always when the - when all the kids are home from school, they're drawing down on either internet or mobile phone data access, and your speeds are dropping out or becoming a lot slower, so it's that reliability of connectivity that is probably the biggest issue for members.

Most people have some sort of level of connectivity, but at least, as Telstra or any other corporation would say, yes, they cover this area. I guess there's that reliability that we're not experiencing in Victoria in particular.

MR HOSKING: And just to add to that, the nature of agriculture is it's seasonal.

MR LINDWALL: Yes.

MR HOSKING: So you know, we've just come out of our - probably for - I'm a grain grower, so for us our peak season is that November/December period, which is our harvest time, and I guess it would be fair to say it is rare to say to hold a mobile telephone conversation for longer than 10 minutes without dropping out, during those peak periods, and you know, it's simply a matter of redialling, but that's the reality of the huge load that comes on the tower during that period, and of course, if you went there in the middle of winter then there'd be very little demand on the tower.

MR LINDWALL: Yes.

MR HOSKING: So the infrastructure has to be built to cope with the peak, not with the - - -

MR LINDWALL: You're not used to standing outside for long periods of time in winter. Yes, no, that's true. I mean, that's - I think you'll acknowledge, no, that no system is perfectly reliable.

MR HOSKING: Yes, yes.

MR LINDWALL: I mean, the fixed line to the home is not 100 per cent either, so - - -

MR HOSKING: Yes.

MR LINDWALL: So I mean, what type of services do your members still use in terms of fixed line to the - the Universal Service Obligation as it currently stands, are they still strongly supportive of it, or do they just want it changed?

MR HOSKING: They - and I guess our submission hopefully reflects that, that they want reliable access to telecommunications and data. Now, we say they don't really care how it's delivered, and to a certain extent they don't as long as it's reliable. You know, if it means tying two cups together with a piece of string, if that works and it's reliable then let's do that.

But I guess, the copper wire principle, for many of our members that's become redundant, but not all. So that's probably the challenge that we're facing. We're in that middle period at the moment, but - - -

MR LINDWALL: Well, I can understand that if you have less reliability than you like, you will want alternatives to give you a greater certainty about what you are getting.

MR HOSKING: Yes.

MR LINDWALL: Anything else you'd like to say about the satellites as you observe them, and what you've said already? Is there anything that should be - what more could be done apart from the continued rolling out of the service and improvement of it by the NBN? I mean, could you comment, for example, on the retailers and your members' experience of dealing with the different retailers? Are they getting sufficient information about what they should expect, et cetera?

MR HOSKING: Yes. When it comes to satellite, it would appear that the number of retail options that you have as a consumer is less than - - -

MR LINDWALL: About 12, is that about right?

MR HOSKING: Could be. Yes, look, I don't know the exact number, but certainly there's a world of opportunity if you have NBN to your premises. There's a slightly

smaller but almost equal world of opportunity if you have, you know, wireless access to NBN.

MR LINDWALL: Yes.

MR HOSKING: If you're going for satellite access, then there's only a very small number of - or very small pool of retailers that you can use, and what we do know is that - I guess, and it's one of the things that our members express about the NBN quite frequently. They know it's going to cost them more. They know it's going to be reliable. They know the speed is going to be slower, and they know the capacity is going to be smaller. So they know they're paying more for an inferior system based on where they live. And that's one of the frustrations they experience. In terms of dealing with the - - -

MR LINDWALL: But they understand why it might be more expensive?

MR HOSKING: Look, I think when NBN was first announced, and this is going back many, many years ago, many of our members and many of, you know, people living in our communities, said, "Isn't this going to be great? We're going to have internet and that that's equal to everybody else in Australia, they'll have it 97 per cent, and we're going to be paying the same, and everything's going to be fair and equal."

But it hasn't turned out that way. The reality as it's rolled out is that the world's different depending on where you live.

MR LINDWALL: So do you think there were false expectations, or a misunderstanding of those - - -

MR HOSKING: I think as those - as the information became available then the expectations were curbed. That's a polite way to say it.

MR LINDWALL: Well, I mean, I've grown up on a farm myself, so I know some of the frustrations that come with living in rural areas.

MR HOSKING: Yes.

MR LINDWALL: You know, it's a longer time to get to a hospital, and getting emergency services, obviously. I mean, that's the nature of the beast, but I don't know if there's anything more that can be done. Everything - every improvement, if it's being well-delivered, costs more money, and it's a balance where the money should come from, how you should fund it, and what's the alternative use of that resource, which might be for something else.

MR HOSKING: Yes. We do hear anecdotally, again, of a tremendous amount of - I'm trying to use the right word - clunkiness, maybe, in the actual rollout. The actual getting someone to come to your property and fit the satellite, fit the wireless connection, is slow, unreliable and almost unreasonable in their expectation of what the customer will provide, you know?

"Will you be available between Monday and Friday between 9 and 5 each day?" Well, that's a fairly unrealistic expectation for somebody who doesn't work out of their home, who works in a paddock with minimal access to connection.

MR LINDWALL: I did hear that in, say, in Cairns, people were concerned that some of the workmanship of the satellite installations was shoddy. Is that something you've heard too?

MS GORDON: I haven't.

MR HOSKING: Yes, look, I - - -

MR LINDWALL: Maybe that varies where you are.

MR HOSKING: Yes, I know of one neighbour who's been quite frustrated with the fact that they've been to his property three times now to fit the satellite, and seem to leave the right part to put it on the roof behind every time they come, or a different right part, maybe, but you know, look, that's - maybe that's employing the cheapest contractor, I don't know.

MR LINDWALL: Yes. Well, I think we've covered all of those types of issues. Could you, just for the record, talk about some of the technological benefits that come to running a farm using broadband, and what are the types of scope there might be?

MR HOSKING: Yes. We're in this really - I almost call it an exciting space at the moment in agriculture for what we can do with technology. We already see a lot of the machinery that we buy, particularly in the United States, where in their rural and farming communities they actually have very good wireless connectivity.

So we're seeing headers that can be monitored via the factory, their manufacturing experts there, to ensure that they're performing at their peak capacity and that they're performing in the most sustainable and efficient manner as well.

So you know, that's a really exciting improvement. We're seeing much more technology. We've seen a rollout of - one of the Water Commissions in north-west Victoria has fitted wireless meters on their water meters, so a research group, a grower-owned research group has attached weather stations to many of those wireless stations.

So, you know, we're actually starting to map things like frost events and rainfall events - - -

MR LINDWALL: Yes, yes.

MR HOSKING: - - - down to a very, very small area, which is - poses, you know, huge benefits potentially for productivity.

(Mobile phone ringing.)

MR LINDWALL: What's this thing - - -

MR HOSKING: Another one going there? But also benefits in terms of insurance and that sort of thing, ensuring that we have a competitive market there. In terms of what the future may hold, I recently visited a property at Sutton Grange, so just between Melbourne and Bendigo, where they had set up a - they call it a daisy chain network, bouncing off a wireless NBN, you know, base station, which was a couple of kilometres from the property, and they had it down to the point they had a cover on a couple of sheep, and they had a monitor about the size of your mobile phone with a solar panel on top of it, and they monitored that sheep's temperature constantly, its movement, and even in the middle of the night it would alert the grower if the sheep was moving abnormally, perhaps a fox in the paddock or someone trying to steal it.

The animal welfare opportunities that something like that presents, in terms of - - -

MR LINDWALL: Yes, yes.

MR HOSKING: - - - even that temperature monitoring and being able to identify a sick animal before it shows any symptoms, that's enormous, and from a biosecurity point of view, when we live in a world where people are more and more frequently travelling overseas, or even ordering things direct overseas, and you know, we hear examples of people ordering machinery parts from overseas and they're being sent to the middle of a - perhaps a grain growing area, and then the packaging is being opened there in the paddock, where if there is a live insect in that paddock, then there's a huge biosecurity risk to our agricultural industry.

So we're entering into a world where the world's coming to us, but without that connectivity we don't have the opportunity to monitor and protect our borders in the same way, so I think there's an enormous wealth of productivity that's going to be kind of uncoupled if we can get this connection thing right, so yes.

MR LINDWALL: Yes, I can understand that. Are there any final questions, and then I'll ask a few?

MR HOSKING: Yes.

MR LINDWALL: I understand there are technologies where people in farms can take their broadband connection from their premises and basically transmit out to paddocks. Is that something that you've seen a bit?

MR HOSKING: Yes. That's the daisy technology that I looked at at Sutton Grange, and that was set up by a couple of young guys who are computer engineers, and it was as much a demonstration to kind of prove what could be done and prove to themselves that they could do it, kind of a new business venture.

What I can understand, it was done on a small property, so you know, a few hundred acres, so - and the closeness of the relay stations was probably - it was hilly country, so admittedly they would have had to be a little bit closer, but they were probably no more than 200 metres away from each other, so practically implementing that across a 5,000 to 10,000 acre grain growing property or broad acre farming property at this stage isn't really realistic, but we are seeing those opportunities come, and it will be exciting when they do.

MR LINDWALL: Yes.

MR HOSKING: It isn't the ultimate - like, the ultimate solution is to have that - you know, whether it came from a mobile phone network that was reliable, whether it came through a satellite that's reliable, it could come to the tractor cabin, could come to the dairy, could come to the hay shed, could come to the - you know, wherever it should be, wherever the grower might need it, and wherever technology can aid what we're doing and make us better farmers and - - -

MR LINDWALL: But I think - I would imagine that the type of data that's required - the amount of bandwidth that's required for transmitting from the paddocks is not that much, really, is it?

MR HOSKING: No, no.

MR LINDWALL: It's not like you're streaming videos out there.

MR HOSKING: No, no, we're sitting on YouTube in our tractors. But yes, look, I guess that - at the moment, we don't have a reliable enough network to deliver that, so I guess that's the big - that's the final frontier, really.

MR LINDWALL: Brett or Melanie, do you have any final comments you'd like to make?

MR HOSKING: No. Look, I think we've covered most things, but I'd certainly like to emphasise that point that, you know, it would seem that at the moment the level of - you know, and it seems to be coming from government, from telcos, from, you know, all service providers. NBN's one as well. That it seems that geography, where you live, determines the level of service that you could expect, and to a fair-minded reasonable person, it doesn't really seem right, and I think we've got a big task ahead of us to fix that.

MR LINDWALL: Indeed. All right. Well, thank you very much for coming today, then.

MR HOSKING: Thank you.

MR LINDWALL: We might have a morning tea break for everyone. I think we've got some instant coffee out there and a few other things. I don't know what's out there, but maybe we'll go and have a little break and then we'll resume in 20 minutes or something.

ADJOURNED **[10.31 am]**

RESUMED **[10.50 am]**

MR LINDWALL: You're both ready?

MR FORMAN: We are.

MR HEALY: Certainly.

MR LINDWALL: So David, would you like to introduce yourselves and make a statement as you see fit?

MR FORMAN: Yes, so David Forman. I'm the public officer of the Competitive Carriers Coalition. I'm also the senior manager, industry and policy, for the Macquarie Telecom, which is a CCC member. So both organisations have made submissions into both. The issues that are raised in both are consistent, but we can speak to either of those if - - -

MR LINDWALL: Excellent, yes.

MR HEALY: And to the extent I have to wear a different hat, yes, Matt Healy from Macquarie Telecom, who is the executive for industry and policy. Perhaps David could start off.

MR LINDWALL: Go ahead, David.

MR FORMAN: If I might. Thank you for the opportunity, and thank you for the work into the draft report. We found it - we welcomed the freshness of thinking. I think particularly if we might reflect on the history of our time in dealing with the USO, one of the difficulties with dealing with issues around the USO has been that it's been very poorly defined and confused as to what its purposes are, and that's become more evident in time, or more of an issue over time.

And I think that's because the USO is a device that was conceived and designed really in a very different era, a very different era of technology, a very different era in relation to the nature of the telecommunications industry, and a very different era in regard to the view of the role of government.

In a sense it was developed in a time where it was sort of a direct linear path from the old Postmaster-General running telecommunications, so it reflects in some ways that kind of thinking that the government will resolve whatever problems there are, and that Telstra was still perceived largely as an instrument of government at that time, and of course we're in a very different world today.

But I think part of the issues that we have in dealing with the questions that arise around the future of the USO arise because people inject their expectations into this policy device, which really, as I think you've mentioned a couple of times, it's actually quite simple. It's trying to deliver a universal availability of a thing called the standard telephone service, which in our view, again, we would agree with the Commission, is an outdated concept, and not a useful one to take forward.

The Commission's use of the ideas of availability, accessibility and affordability in designing a future USO, for want of a better expression, I think is also very useful, because it allows us to separate the NBN and the investment around that, and the accessibility and availability issues into that bucket, and then the affordability - the affordability questions can be dealt with separately, and we would regard those questions very much as issues that should be resolved with the lens of social welfare programs.

I think that would bring a much clearer focus to the design of those programs and the expectations of those programs, and separating - utilising the opportunity of the NBN to separate the availability and accessibility questions also allows to do something that's not been done effectively in the past with the USO, and that's to consider the competition implications of the policy.

Certainly those competition implications are the things that are top of mind for much of the rest of the industry. The USO acts as a device that impedes upon the ability of people to compete with Telstra, because it provides a subsidy that is, as the draft report finds, and we would certainly agree, a subsidy that is very, very loosely defined and very, very loosely administered, and we suspect the money that we - every member of the CCC and Macquarie Telecom specifically hands over to subsidise Telstra, we suspect that it's used to advance Telstra's commercial interests, simply because the lines of what the - the boundaries of what can be done within the USO are so blurred and confused, and the opportunity to clarify both the competition implications of the USO through the use of the NBN and define very, very much more precisely who it is who should benefit, and treat that as a social welfare issue to be dealt with on the budget, is potentially a great fork in the road, and we really welcome the Commission's reflections in its report.

MR HEALY: I might just make a couple of observations as to why Macquarie Telecom sees the importance of being here today and participating in the Productivity Commission's work here. Firstly, Macquarie Telecom started almost 25 years ago, so entered the market as a new entrant on the opening up of competition at a time when perhaps the standard telephone service as it's currently defined was relevant and was useful and had a place in the communications market.

However, 24 years, nearly 25 years on, I think obviously the world we operate in has moved on a long way from the rotary dial dial-tone and Bakelite handsets. So I think we bring some of that historical view to the debate here and the discussion, firstly.

Secondly, we obviously write a cheque each year, as David mentioned, contributing to the USO, and we therefore have an interest, both from our shareholders' perspective of ensuring that that money is well spent and that it goes to the targeted areas that is most beneficial, if at all.

So both the history, the writing of that cheque is something of interest to us. Thirdly, our target market has always been corporate Australia. So Macquarie Telecom's target market is medium size enterprises up to not quite the largest top end of town, but sort of those that are perhaps below the top 50 companies in Australia, down to those that employ perhaps 300 or 400 employees, and as such, we're the sort of engine room of the economy, and it is very much our customers who need to make - they need to be able to communicate with and contact consumers in order to then be profitable and survive, so our ability to meet their needs is in turn important.

If their communication services with their customers is deficient or is not as it should be or is not as broad as it could be, the target market, the addressable market, if it's not as effective as it could be that is an effect on our customers.

So that's sort of the history of the money, our customer base, and I think our insights into what might be loosely called the new economy. So many of our customers now are companies that were born on the web, so they were not encumbered with some of those legacy arrangements of how one needs to organise oneself with infrastructure, but make use of the internet in particularly, and data services more generally to run their businesses and contact their customers. And these are companies like BPay or Flight Centre or Webjet, that - and those insights of those - very much those digital economy companies, and who in turn need to contact and be able to be contacted and communicate with their customers, I think we can bring some insights into why having the kinds of underlying bedrock telecommunications services in this country available to all at a fair price is something that's important to consumers, our customers and us, and our shareholders.

MR LINDWALL: All right, thanks, Matt. Your submission and comments suggest that the actual cost of the current Telecommunications Universal Service Obligation are considerably less than the $300 million per annum that's been paid. Do you have any evidence for that? Or how would you calculate that?

MR FORMAN: That's a good question. I don't - we're not in a position to calculate what it should be, other than to look at the amount of money that's spent and to try to map that against the kinds of estimates of the numbers, for example those in the draft report, the numbers of payphones that are being subsidised and the cost of those, what it would cost to build an extensive network, and what we could do at Macquarie Telecom with $200 million of capital compared to the - just $200 million of capital, which is the industry levy part, compared to the number of, again - you know, from a social welfare

perspective, the number of individual citizens who you might say have a network connectivity issue.

And again, I think that's where the question of affordability, it's very useful to separate that out, because we have no legs on affordability.

MR LINDWALL: Now, of course, in our report we've tried to structure our response based upon the practicalities of what we see in front of us, and one of it being NBN, obviously. The USO as it stands and the NBN are creatures of the government, to a large part. They're highly regulated. They've been structured by funding directly, whereas the mobile phone service has grown organically, one could argue, with limited government regulation and limited government support.

Obviously the Mobile Black Spot Program is expanding that, and I think in our draft we said that we wouldn't think that there's a need to increase regulation in that space. Would you agree with that?

MR FORMAN: We don't believe that mobiles should be captured by a new USO. We think that there are competition concerns in mobile markets, and we've been on the record discussing those. For example, the nature of the wholesale arrangements, the absence of commercial roaming arrangements, and the debate, ongoing debate, around what parts of the continent constitute a natural monopoly for mobile services and what the appropriate regulatory arrangements are to deal with that.

But all of those issues we would regard as being things that should be regarded separately to the USO as it stands today and how it should be taken forward on the basis of the NBN.

MR LINDWALL: Yes.

MR FORMAN: If you regard the NBN as providing a minimum universal standard - and despite the debate that was had in this room earlier today, it remains our understanding that the USO - sorry, the NBN is intended to provide a minimum download speed to all Australians.

That to us is a very neat place to evolve our thinking around the USO rather than trying to capture all of these other issues that are ongoing in the mobile space.

One of our reasons for saying is it gives us the ability, as I said earlier, to, for the first time, put a competition outcomes lens on a new USO, because we've separated a wholesale platform upon which anybody could then be asked to provide services to social welfare recipients. That is not the case in mobiles. As soon as you began to include mobile services in a USO, you would start to reduce the field of people who could compete to deliver those services, because those are vertically integrated markets.

MR LINDWALL: Do you have any comments on the Mobile Black Spot Program?

MR HEALY: Certainly. Well, we think that the funding arrangements for quite some time are fundamentally flawed. It - the Mobile Black Spots funding outcomes are a useful piece of evidence to demonstrate the natural monopoly characteristics of much of regional and rural Australia in terms of mobile connectivity and service availability.

At the competition level, absent government funding, we're of the view that there's an incentive for Telstra, as the operator with the largest coverage, to essentially only need to have coverage that is one tower further out than its nearest competitor, which is often Optus, and sometimes it's Vodafone. But if we take the loose market shares of Vodafone first and then Optus second and Telstra with the largest footprint of coverage, Telstra doesn't really have an incentive to build out beyond Optus very far. It only needs to be somewhat further out from it as the costs associated with deployment further out where the densities of consumers is not that high, means that it's probably often not worth it doing it.

So then when the government decides to, for largely political reasons, make available to those in the regional areas that currently don't have coverage - if it puts its hand in the pocket of the taxpayer to fund an extra build, you can see that it kind of makes sense for it to increase the Telstra coverage, because to pay Optus to go further than Telstra would cost more than just the incremental build out by Telstra.

So you have this sort of - the Black Spots funding largely sets up an unhelpful cycle, whereby in order to increase availability of mobile services in the regions, the taxpayer is funding Telstra to build out a monopoly that is ever increasing, and that acts as a competitive constraint against those that, you know, would also seek to be able to get some government funding to compete against Telstra in those areas, like Optus and Vodafone.

So I think that is a flawed arrangement, because value for money on the short-term would say that, yes, Telstra makes sense to be given the money to increase its footprint. It's already got the largest. If you want to increase that, well, give it to Telstra. But the problem is, that just is a competitive advantage to Telstra that actually affects Macquarie Telecom back in the cities, because the ability for Telstra to sell its mobile services bundled with services in the city to a business, where - and to be - you know, to sort of use a fairly crude example, where the CFO of a corporation that Macquarie might want to be trying to win the business of, if that CFO happens to have a beach house on the coast, she might only have connectivity with Telstra, so she will - and that company will be minded to try and get the Telstra over the line as against Macquarie, who can maybe get wholesale services from Optus Mobile or Vodafone Mobile, or a sort of a cut-down version of the Telstra mobile footprint, but will never have the full coverage that Telstra has, so therefore its coverage in the regions gets leveraged back into - its monopoly power in the regions gets leveraged back into markets that should be fundamentally competitive like urban and business markets.

MR LINDWALL: So you think that the CFO is acting in her self-interest in that - - -

MR HEALY: Well, you know, I didn't mean to say that, but these things happen from time to time. But you know, I'm sort of taking the example to the extreme, but it is that area. Other areas is we are largely kept out from the fleets of services for the logistics industry, because they are operating in the region, it's very much they rely upon connectivity.

We're also kept out of many corporate deals where machine to machine functionality - so is the sort of Internet Of Things, where machines, whether it's farming machines or mining machines, need remote connectivity to provide diagnostics that will have you back into head office or back into the central office.

And again, it's the coverage player that runs the show there, and we find it unacceptable that taxpayers' money goes to deliver Telstra that business.

MR LINDWALL: Sorry, David, were you about to say something?

MR FORMAN: I was just going to say that the model of funding for mobile expansion really hasn't changed for 20 years. Some of the sort of competitive tweaks and obligations have been dialled up and dialled down in different laws, but sadly for both of us we've been doing this sort of thing around this industry for a long time, and there have been program after program, always seem to have the same outcome.

There's never strong access requirements on the grants that go to, largely, Telstra, which just continues to expand its footprint each time it becomes available.

MR LINDWALL: I assume you've been submitting to the ACCC inquiries?

MR HEALY: Yes, most certainly. But I think there is something of relevance here back to the present inquiry, in that the solution, as it were, for the mobiles issue is really around having wholesale access, and regulated access, and in the NBN space, in the fixed line, in the USO context, that's also what should be there, and largely is there, because we have a wholesaler who can't retail, so is incentivised to seek retail service providers to service customers.

So I think there is a model here with the NBN and potential USO delivery for areas that are non-commercial - there is a relevance over to the mobiles regulation, where again, I think in the areas where it is a bottleneck, where you can only commercially justify one operator, then that operator ought to be - provide wholesale services to other operators to ensure that consumers in those areas get choice.

MR LINDWALL: But Telstra says that it does provide roaming agreements and access to its network to other competitors, if they wish to pay for it.

MR HEALY: I think that the price and the terms of that payment, absent regulation, I think history shows a monopoly generally doesn't have a great incentive to provide - well, not a monopoly, but those with market power don't necessarily have an incentive to strike deals, absent regulation.

MR FORMAN: And I think just also, without wanting to get too far diverted into the mobiles world, I'm not sure that Telstra has any roaming agreements at the moment. They have had limited ones in the past, but I don't think they have any at the moment, and separately to that, there are wholesale agreements, where companies such as members of the CCC can re-sell Telstra products under their own brand, but what has happened over time is that the ability of those companies to leverage their own network investments to transform those products has become less and less, so now there is very little ability to manage the back end of the data, for example, much less than there was previously, and the product itself is geographically constrained and has performance constraints on it.

So I think Telstra - yes, Telstra does participate in wholesale markets on a commercial basis, but there's no countervailing market power in the negotiation, so it kind of does what it thinks it can get away with, and what is in its commercial interests.

Just to that issue of the importance of separating the wholesale from the retail market, again we would say, going back to the importance of utilising the NBN in the context of any new USO, while it also identifies the geographically marginal areas, it also provides the opportunity to service those customers for whom there is an affordability issue anywhere in the country, because we all know what the prices of providing the service will be.

If people aren't able to afford the service that has that sort of uniform wholesale component and a commercial retail margin, then they will pretty quickly become - it will become clear who those people are, and so it should be possible to have very, very precisely designed and targeted social welfare policies to pick that up.

MR LINDWALL: Which is what we basically said, targeted approaches.

MR FORMAN: Yes.

MR LINDWALL: Now, how many of your members would offer as retailers NBN products?

MR FORMAN: I think they all do now.

MR LINDWALL: Including. Including the satellite zone? Could you talk a bit about the challenges as a retailer of NBN products, and what type of feedback you've received? And I can talk about some of the feedback I've received, not about necessarily the members, but generally about retailing in NBN?

MR HEALY: Yes. The issue around - the key issue around NBN for Macquarie Telecom to date is around two areas. One is the lack of a business-grade service, which is perhaps not necessarily germane to the current inquiry. So that's one, but if we park that, the second one is around the fostering of a wholesale market.

The way NBN, as you probably appreciate, is set up is that NBN is responsible for the - from the network from the front door of the consumer all the way through to the point of interconnect, which is a hand-off point, 121 sites around the country, and at that point, that's the end of NBN, and there's two options, really.

One is that a retail service provider like Macquarie Telecom goes out and builds network or acquires network - - -

MR LINDWALL: At each of those 121 - - -

MR HEALY: To the 121. Or where it doesn't have sufficient density to justify that build, because it is quite expensive to build out to these points, then it - the hope was that there would be a wholesale market at that point.

And indeed, when the 121 points of interconnect were established, the market structure at that time indicated that there were a couple of things that gave us confidence that there would be a wholesale market for backhaul, as I'll call it, from the POIs back to where we have existing network.

The reason we were confident about a wholesale market and that 121 seemed to be the right number was because there were some independent network owners at that time, like Next Gen and Vocus, who didn't really have retailing operations so much as wholesaling, and they were obviously looking to deliver into that market.

Secondly you had quite a degree of independent retailers, so iiNet, Macquarie Telecom, Internode and others who were independent of those vertically integrated network owners, so they had a pool of traffic, and so they would be able to sort of shop that around to the wholesale market. So that was another reason why we had some confidence that there would be that. And we also had the words from some operators that said, "Yes, we will build out, and yes, we will provide those services."

But kind of fast forward the three years or four years in a sense since that initial establishment of the 121, we have a very different looking market structure. So we've had a lot of consolidation whereby those independent operators, the independent retailers, have been bought by integrated wholesaler retailers.

So the classic example is iiNet being bought by TPG, and then TPG picking up - - -

MR FORMAN: AAPT.

MR HEALY: - - - AAPT, which was one of the independent network owners - - -

MR FORMAN: And Next Gen.

MR HEALY: - - - and Next Gen going to Vocus. But if I focus, the easiest example is to use TPG, just as a sort of a neat example. TPG now has - as a vertically integrated operator at each of the 121 interconnect points, it's really interested in providing traffic

for itself, as it were, and is not particularly incentivised in these early - certainly, we've found, in the early days of NBN, to establish a wholesale market.

So you have Telstra that's vertically integrated and seeking to maintain retail margins and therefore focus on retail services. You've got Optus in the same bucket, and then you've got TPG in the same bucket, means that there is, quite frankly, no wholesale market of any effective kind for an operator of our size.

Now, the idea of NBN was that by having wholesale only and open access and non-discriminatory pricing principles that there would be a relatively low barrier for entering the market, and you would get niche providers and those that had particular technologies or market segment focus, and you would get some real competition going, and I think these early days of market share statistics that are coming out, and we saw some last week, indicate that that, you know, hasn't happened, that you've just got a consolidation at the retail level of those three larger operators, slash four if you include Vocus, and the slice of the pie that's left for either newer entrants or niche providers or whatever seems to have narrowed, and that's a real concern because, you know, we've got enough concentrated markets in this country, whether it's groceries or, you know, airlines or banks, and - - -

MR LINDWALL: That wouldn't be true of all 121 points of interconnect, though.

MR HEALY: No, it wouldn't be. So in - I think I'm right to say Exhibition Street is a point of interconnect. So at that location there is plenty of coverage. But Macquarie Telecom finds that if we were going to win a customer like JB Hi-Fi, for instance, that's fine, we can service all of their CBD offices and outlet through a POI that we can commercially get into, Exhibition Street, but it's not much use for their Bathurst shop or their Bendigo store.

Out there, we literally have no connectivity because there is no wholesale market for a POI out in Bendigo, and so for us to get - to connect to that one customer that we might have at Bendigo at the moment, it would be literally hundreds of thousands of dollars a month to get the cable out there and provide the interconnect, and we obviously can't recover hundreds of thousands of dollars a month from that one site of that one customer.

So for those that are nationally focused, if we can't go to the 121 POIs through wholesale arrangements, it really does constrain our market, and it's difficult to win deals. I think - - -

MR LINDWALL: So how many of the 121 would you say are more problematic?

MR HEALY: At this stage, I think a good 40, yes? And the pricing constructs of those that might offer services out there are not particularly attractive. They require you to buy either large chunks of bandwidth, and in that example I just gave with JB Hi-Fi, if we've only got one customer at Bendigo it's difficult for us to buy capacity for, you know, 100 customers initially, so the pricing constructs don't work very well, and that's partly because of the way that NBN has structured the interconnect arrangements.

So we think there's some flaws that really do need to be shaken out here, and I think until a wholesale market emerges, the simplest option is to provide hand-off at more centralised areas until there is a degree of competition, and the wholesale market might emerge, and then, you know, those POIs in the capital cities could - well, the regional POIs could be, as it were, turned on after that.

MR LINDWALL: How would that be achieved?

MR HEALY: Through regulation, yes. I mean, the POIs are purely a construct of regulation, so this can be done.

MR LINDWALL: What about third party access under the Competition and Consumer Act?

MR HEALY: To those - to the POIs, or - - -

MR LINDWALL: Yes, to backhaul from these - or what you'd say is retailer/wholesaler conglomerates?

MR HEALY: Yes, this is a - the problem is that the Commission decided that the 121 sites ought to be competitive, so they're not, in a sense, subject to regulation, so it's a bit of a Catch-22 situation. They won't - they're not regulated, because they're meant to be competitive.

MR LINDWALL: Yes.

MR HEALY: We say they're not competitive, they should be regulated, so we need to go back and revisit this issue.

MR LINDWALL: And argue the case, yes.

MR HEALY: Yes.

MR LINDWALL: And - sorry.

MR FORMAN: Sorry, I was going to say, another issue on the other side of the POIs, as it were, that affects all of the CCC members is the pricing construct of NBN itself. So I'm sure you've had plenty of submissions that have spoken about the CVC element.

I mean, fundamentally there are two problems with the CVC pricing arrangement. First is it's simply too high. But secondly, it's a mismatch between the way retail markets are priced and the wholesale product is priced. So the retail markets are flat monthly fees to consumers. The CVC is a usage-based charge, so as people use more data, which everybody wants them to do, it's going to - NBN, ourselves included. As they use more data, the wholesale component of - the CVC component of the wholesale cost goes up, and so the retailer's margin shrinks, therefore the retailer is put in a position where they

have to limit the download capacity of the service to the end user in order to stay in business.

That needs to be dealt with at some point. That's an unsustainable situation.

MR LINDWALL: There are discounts available, which I think Telstra has commented upon.

MR FORMAN: There are, yes. There's a - - -

MR LINDWALL: On CVC charges, which if you have large volumes - --

MR FORMAN: As your volumes go up, your charges come down.

MR LINDWALL: Yes.

MR FORMAN: But all that means is that retails just sort of bump their head at this capacity price point regularly. As usage goes up, there's no sort of stable margin that they can rely upon. And it's all subject - I mean, we have raised an objection, CCC, to NBN's use of the term "discount", and they're keeping the opportunity for themselves - the option for themselves open of taking those away over time.

I mean, clearly this should be a ratchet arrangement where the price comes down with usage, because nobody can build a business sustainably on the basis that, "We're doing you a favour this month, but at some point we might take it away."

MR LINDWALL: Some of the comments we've received in some of the hearings and submissions have related to uncertainty about who is responsible - well, clearly the retailer is responsible for dealing with the customer about an NBN issue, but basically finger-pointing about who's actually going to fix the problem, whatever the problem might be.

Is there anything that should be done further about improving the understanding by consumers about their rights and obligations?

MR FORMAN: There's a- I think there's a historical problem around who's responsible for things like the customer service guarantee, and then there are issues about how we communicate with customers in the NBN world, and again, I think a new USO maybe can deal with some of these if we have a review - timely review of our customer service model.

At the moment under the existing customer service guarantee arrangements, the obligation is on the retailer to meet those obligations, and yet very often they will have absolutely no capacity to ensure, for example, that network faults are repaired in time, because they're reliant entirely upon Telstra providing - - -

MR LINDWALL: Or NBN.

MR FORMAN: - - - that service in a timely fashion. In the existing model.

MR LINDWALL: Yes.

MR FORMAN: In the NBN model, those same problems exist, but there's an added complication in that it's partly a result of the important rigour around structural separation of NBN, that the communication between NBN and the retailer needs to be transparent and useful and timely, but the responsibility for the communication with the end user customer has to sit primarily with the retailer.

I think there are some teething problems as to how we resolve that over time. I think the primary issue needs to be making sure that we've got the right communication between NBN and the retailer so that the retailer knows what's going on and doesn't find out from the customer that a connection time was missed, which NBN has not communicated to the retailer.

MR HEALY: I think we have suffered from the impact or the effects of the change to the multi-technology mix, where areas that were expected to be and were on a roadmap that indicated they would fibre to the premises become fibre to the node or perhaps an HFC based service, and that creates problems for RSPs because they may have been planning for, and in our context we might need to - the implications of one site of a customer becoming NBN might mean that the data network that is being used by that customer across a number of sites, some of which are NBN and some which aren't, probably needs to be reconfigured.

And the way we would reconfigure that if it's a fibre service or it's a copper based service or an HFC. So if there is a change in the deployment class and we don't know about it or we find out late, there's real knock-on effects with the way that the customer's expectation has been set, and then - and so there's a bit of a sort of - it's the classic sort of finger pointing of whose fault this is, and at the end of the day the consumer is the one that's getting dudded here, and they will initially blame the RSP, because that's where the relationship is, and it's a source of aggravation that unless there's decent transparency between the RSP and NBN Co about its roadmap and where changes are happening and when and - that has to be crystal clear, and it's not, to date. It's not as good as it should be or could be.

MR LINDWALL: So should retailers communicate better with the consumers about if they sign up for a particular package, 25, 50, 100, 12 - - -

MR HEALY: Yes.

MR LINDWALL: - - - what type of download and upload speeds they should expect on average, and a minimum, perhaps?

MR HEALY: Well, I think they should, but unfortunately things like the CVC pricing model and the differences in technology that are out there that deliver different outcomes

means that, from my viewpoint, retailers are no longer really selling services as much on speed.

I happened to be lucky to get NBN under the first round as a consumer at home, and I was offered speeds and download volumes that I could choose from as sort of a smorgasbord. Fast forward to today, and I cannot do that. I just get the download limit that I would be purchasing from one provider or another and a couple of other bells and whistles, but I won't get commitments for speed anymore from the major providers, and I think that's because of the uncertainty around what they can provide because of the different technologies that have different limitations from the access side, and then also the things that they'd need to do to manipulate and manage the backhaul in order that their costs don't blow out as a result because of the CVC pricing construct.

So all of those things are problems for the RSP to manage with the end user, but I think at their heart is about decisions that NBN has made, so I think if we could get a better model for the CVC pricing and we get better and more transparent flows of information between the RSP and NBN Co, I think the consumer's going to be better off, and they will start to get those choices, and they will be able to pick and choose some offers in the market that are real differentiations.

MR FORMAN: It's inevitable that the multi-technology mix will result in greater consumer dissatisfaction even if there is complete transparency about what's available to an individual consumer, because there's now always going to be a situation where people in one street are going to have a technical constraint that people in another street don't, so people in one street will inevitably be told, "Okay, you're buying a service that's up to 25." People in the other street will be told, "You'll get 25, because you're on fibre."

That's - you know, I mean, that's a heartache that we're all going to have to deal with in the industry and it's going to be a communication challenge. You can imagine what it's like for consumers trying to deal with this.

MR LINDWALL: Government, of course, has said that the multi-technology mix has enabled the NBN to be rolled out quicker to more customers than the alternative, and - is that a reasonable argument?

MR FORMAN: They've said that.

MR LINDWALL: Okay.

MR FORMAN: We're in no position to - - -

MR HEALY: I mean, I think that the pause we had and the delay we had whilst that negotiation had to happen around the change of technology - I think if we didn't have that, then - - -

MR LINDWALL: Yes, got you. Now, the statutory infrastructure provider that's out for comment, have you got anything that you'd like to say about what you like about it, and if there's anything you dislike about it?

MR FORMAN: I think it's - this package of legislation is making clearer and more consistent the arrangements - the statutory infrastructure provider is a logical construct, it's a necessary construct, and it does overcome some of the potential problems of some consumers in one street being in a completely different regime to another, so those things I think are all positive.

The industry levy that's attached to that, which is intended to maintain the cross-subsidy when - allow for, in effect, cherry picking, while maintaining the cross-subsidy that allows for caps on the prices in regional areas I think is important, and that it's targeted at people who are building NBN-like or NBN-substitutable networks is in line with what the CCC recommended as the most appropriate approach.

And again, it's neat in that it can be quarantined into this infrastructure and accessibility part of a sort of future model for dealing with universal service.

MR LINDWALL: Finally - excuse me. The TIL, the levy you're already paying, and of course I know your view is that it's too high, and you'd like the alternative, but would you like to comment upon what we said in our report about having government funding versus having a small levy?

MR FORMAN: We agree with what you've said in the report. Would, add, though, another - one other comment to that, which is that I think part of the reason that this USO beast has managed to roll on for so long has been that there's been a sense that this - at least for a long time, all of the cost of it was an issue for industry so, in a policy maker sense, who cares?

I cannot imagine if $200 million - if there was a $200 million line item - - -

MR LINDWALL: As well as the 100, yes.

MR FORMAN: - - - that was managed in the budget of the Department of Social Services or the Department of Human Services that had so little visibility to what on Earth it was there for and supposed to be doing and who was getting it, I cannot imagine that that would have been around for the last 20 years.

I think a responsible minister or departmental secretary would have said, "This program design is fundamentally broken, and we need to get visibility into what we're doing with taxpayers' money. So bringing it on to the budget, we'll add a level of scrutiny and discipline and responsibility inside government for the outcomes of a social welfare program that's been completely absent to this point." Whether it's a social welfare program or a corporate welfare program, you tell me, but at the moment it's not seemingly really owned by anybody.

MR LINDWALL: Now, I'm reminded that something I wrote here about some of the comments I received in another hearing, that there's a large amount of what - you know, dark fibre passing through parts of Australia that was said to be under-used. Is that a credible claim?

MR HEALY: I think yes, there's dark fibre, and yes, much of it is under-utilised, and has capacity that could be tapped. But just because there's some fibre running up beside the Ghan Railway or up the Hume, you need more than just the fibre in order to provide a service, so I think it is - it is appropriate to see how that capacity could be better utilised. To the extent that there's commercial constraints that are because of problems with market structure that stop an owner of infrastructure thinking about utilising it for telecommunication as opposed to just their own general needs, I think that should be looked at.

I'm reminded that one of the early fibre operators in Victoria, in Melbourne's metro area, one of the first to the market, was in fact the offshoot of one of the electricity companies, United Energy, who realised that they had a whole lot of fibre linking up all of its substations and nodes around its electricity network, distribution network, that really didn't use much capacity, because it was just doing little tiny signals, but yet had large fibre out there, footprint.

So they spun off United - UICOM, sorry, yes, UICOM, which became a subsidiary of Optus at the end of the day, and it has been a successful venture. So it might just need to be revisited as to what were the - why did that seem to happen in the past or has happened, but similar kinds of infrastructure, whether it's railways or electricity or gas infrastructure, ownership of that asset, why isn't that being - - -

MR LINDWALL: Yes, is there a constraint to - - -

MR HEALY: Yes, and I'm not sure.

MR FORMAN: I think certainly one of the lessons from the past is, I've been seeing maps of dark fibre owned by various utilities for 20 plus years, which look like a spider's web across the country, but it's a non-trivial matter to often get those - it might be seemingly short distances to somewhere where they can connect to the communications networks. That's the first thing. And it's a major issue for a company that's in the energy business or the transport business to decide to move into the telecommunications business, and suddenly they find that they're trying to enter that wholesale market, maybe against Telstra, which sort of - "Come in, spinner."

MR HEALY: Well, I think even the key of it is, if you look in the regions where the volume of traffic is at the retail level, it's with Telstra, and the majority of the underlying network out there is also Telstra, so if an alternative wholesaler thinks that it might be able to enter the market to somehow or other meet these retail ends, if that retail customer base is already locked up with Telstra, then it doesn't look particularly like a good idea.

I think in the cities it was a bit different, because you already had some contestability and some alternative networks going on, but I think that's where perhaps NBN has a greater role, where I know that there's some NBN arrangements that have locked in Telstra as their own supplier out in the regions, but if there were ways that NBN could seek the services of these alternative fibre providers, that might help. That might be a way in which the structure of the market could work to the advantage of consumers, at the end of the day, because there would be more fibre than is currently - - -

MR LINDWALL: And maybe reduce the usage of satellite services.

MR HEALY: Sure, yes, because that satellite has to hit the ground at some stage.

MR LINDWALL: Do you have any final comments? I'm mindful of the time.

MR HEALY: Sure. I'm good. Thank you for the opportunity.

MR LINDWALL: Thank you very much for coming.

MR HEALY: And we commend the report. The draft report we thought was extraordinarily refreshing and precise and great work.

MR LINDWALL: Thank you. But it doesn't please everyone all the time, as you know.

MR HEALY: No.

MR LINDWALL: Take care. Thank you. All right. I think we now have Janobai Smith from Stop Smart Meters. Correct pronunciation, Janobai?

MS SMITH: It was very good.

MR LINDWALL: Welcome. If you could just introduce yourself and make statement?

MS SMITH: I can. I'll just settle myself in.

MR LINDWALL: No worries.

MS SMITH: Okay. My name's Janobai Smith, and I'm advocacy and policy advisor for Stop Smart Meters Australia. So I'll just start by reading my statement, if I may?

I'm here primarily to advocate on behalf of people who are EHS and rely on landlines and payphones. I also want to highlight the potential costs, which may be considerable, of embarking on a course of action which will result in rural populations being exposed to higher levels of radiation.

EHS is an issue which is garnering increasing attention overseas. In Sweden, where EHS is recognised as a functional impairment, municipalities have a responsibility to accommodate the needs of people with EHS. This might take the form of assessing an

individual's living situation and providing shielding from radiation, or it might involve offering respite accommodation located in low EMF rural areas.

In France, ANSES, the French agency for food, environment and occupational health and safety, currently has a major review underway on EHS. Initiatives are springing up around the world to create refuge zones in areas of low EMF. For instance, this article, "Creation of the first EHS refuge zone in Italy," in a regional park, discusses one such place.

Voice communications infrastructure which does not rely on microwave radio frequency transmissions is essential to these initiatives. The government also must weigh up the long-term costs of not providing residents in rural areas with a safe means of voice communication. This is particularly relevant to children.

A vast body of scientific studies has alerted us to many possible long-term health effects which may occur as a result of exposure to radio frequencies. I'd like to refer you to what the Russian National Committee on Non-Ionising Radiation Protection had to say about this in a statement titled, "Children and mobile phones, the health of the following generations is in danger." I'd just like to read a few words from it. It says:

> *For the first time in history, we face a situation where most teenagers and children in the world are continuously exposed to the potentially adverse influence of electromagnetic fields from mobile phones.*

They talk about the potential risk for children's health, which they say is very high. The absorption of electromagnetic energy in a child's head is considerably higher than that of the head of an adult. A child's brain has higher conductivity, smaller size, thin skull bones, smaller distance from the antenna, et cetera.

A child's brain has higher sensitivity to the accumulation of adverse effects under conditions of chronic exposure to EMF, to electromagnetic fields. Today's children will spend a longer time using mobile phones than adults will. They talk about the short-term health hazards, and then they talk about the expected long-term health hazards, which of course include brain tumours, Alzheimer's, and other types of degeneration of the brain.

They conclude by saying :

> *It is our professional obligation not to damage children's health by inactivity.*

In France, by law, wireless devices are banned in facilities used by children under the age of three. Wireless internet must also be disabled in elementary schools when it is not in use for educational purposes. European countries are taking active steps to educate the population about harm minimisation in relationship to mobile phones. One of the key themes is that children and teenagers should not be using a mobile phone except in an emergency.

What hope do families in Australia's NBN fixed wireless and satellite footprints have of limiting their children's exposure to radio frequency radiation if they do not have access to a landline? Realistically, none. Instead, mobile phone use will increase. And please consider the potential long-term health costs that might eventuate as a result of abandoning the USO.

An increase in brain tumours is but one of the many adverse outcomes which studies have highlighted as being the possible result of long-term exposure to radio frequency radiation. Brain cancer is a rare disease; however, according to Australia's Cure Brain Foundation it kills more children in Australia than any other disease.

According to an independent study prepared for the Cancer Council New South Wales using data available to June 2006, in terms of the financial costs faced by households, brain cancer is the most expensive cancer. Average lifetime costs for brain cancer were $149,400, increasing to $449,400 for males up to 14 years old.

And what about treatment costs that may be borne by taxpayers? An overseas 2013 study entitled "Swedish review strengthens grounds for concluding that radiation from cellular and cordless phones is a probable human carcinogen", states that treatment of a single case of brain cancer can cost between $100,000 for radiation therapy alone and up to $1 million depending on drug costs.

There is evidence of an increase of cancer in general in children, with this report dated 3 September 2016 reporting a 40 per cent increase in cancer in just 16 years for young people. The greatest rise was reported for teenagers and young adults between the ages of 15 and 24. One of the factors attributed to this rise is radiation from mobile phones.

It simply isn't good enough not to make available a safe means of voice communications for Australians living in rural areas. I also don't believe that it can be economically justified if one considers the long-term potential health costs. Thanks.

MR LINDWALL: Well, thank you. The fact is, though, that more and more people are opting to use mobile phones of their volition, so are you suggesting that they're misinformed, or perhaps we should stop using mobile phones overall?

MS SMITH: I think if you look at what's happened in the past with various agents that have been proven to be harmful to the community, yes, there has been a big change. Originally X-rays, when they first were discovered, doctors would use them at garden parties as a party trick. I know a number of people that, when they were a child, their mum would take them to the shoe shop and they would have their foot X-rayed inside the shoe to check the fit, and mum thought she was doing the right thing.

So society does change as more information filters down. Same thing has happened with smoking. At one stage that was quite acceptable. A friend's mother was told by her doctor that she should take up smoking. At one stage it would have been quite acceptable to have been smoking in the car with young kids, but - - -

MR LINDWALL: But I accept that. I mean, I don't think any use of tobacco at any quantity is positive, but surely in the case of cellular phones - well, a large proportion of emergency calls are made by mobile phones, and those people could have died, been suffering injuries which are highly painful, so that's a benefit that the mobile technology has provided. So it's not like tobacco, is it?

MS SMITH: Yes. I'm not suggesting that people give up their mobile phones. I'm suggesting that they need to be used in a safe and informed manner, and what I'm saying is that people need their landlines as their primary form of communication, and if they want to use a mobile phone, that's up to them, if it's available, and remember in a lot of rural areas it may not be available.

MR LINDWALL: True enough, yes. Now, I had a look, and I must emphasise that I'm not a physician or anything, but I had a look at the World Health Organisation, the Food and Drug Administration of the United States, the Cochrane Collaborative, which is the most reputable peer reviewed literature in medicine, and - well, from my scan of that literature, there was nothing that suggested that this was in fact a harm in any way, and that electromagnetic and other radiation surrounds us, both naturally caused and artificially caused, and has in fact led to the evolution to all species of life in the universe, in Australia, in the world.

MS SMITH: Yes. Yes. As I put in my report, that the - humans have now increased the background radiation by billions of times what it used to be. This affects all of humans, it affects animals, and there's been literally thousands of studies on these effects. Unfortunately at this point in time it's not to do with science. The argument is political.

The effects have been known for a number of years. Increasing evidence is coming to light, for instance the US National Taxology program just completed, $25 million study, again they have released some results early, and the results are highly concerning.

This is a report that - on the website of one of our neurosurgeons in Australia, and hopefully you read the reference I gave you from the scientists that are calling for stricter standards. I think it's small wonder that two of our neurosurgeons, including Dr Charlie Teo, are signatories to the people around the world that are calling for stricter standards.

And the problem is, of course, there's such a huge difference in standards across different countries, and Australia has the slackest standards. 40 per cent of the world have standards which are ten to hundreds and even thousands of times stricter than our standard.

MR LINDWALL: But again, the World Health Organisation has, on its website, a paper which says that there's no evidence that links brain cancers and other tumours to electromagnetic radiation.

MS SMITH: Yes, and it's interesting - - -

MR LINDWALL: But are you implying that they're politicised?

MS SMITH: I am very strongly implying that, and I have a reference, actually, here, which I can give you today. A document has just been released this month from a former WHO employee who is accusing WHO of exactly that, and I have brought some of the stories of people who are electrically hypersensitive, if you're interested in reading them. Am I able to leave more documents today?

MR LINDWALL: Indeed, of course, yes.

MS SMITH: Okay, great, will do.

MR LINDWALL: But type of extra controls are you proposing in the use of mobile phones above what we already have in Australia? You said we have slacker standards in Australia than overseas. In what sense are they slacker?

MS SMITH: Our standard is based on the ICNIRP standard, and I don't know if you - - -

MR LINDWALL: Maybe you could elaborate the ICNIRP standard?

MS SMITH: Okay. It's in this reference here that I gave you, and it has a very good graph which that red line is the ICNIRP standard. Now, if you look at some of the other countries, we have Austria, which their standard for what telecommunication companies can emit and mobile phones, is right down here, so you can see the difference. This is on page 4 of that reference.

There is a problem because the standard itself is flawed. It's based on heating effects, and so your body temperature has to rise by one degree before ARPANZA, our agency, will be concerned. Emissions are averaged over a six minute period, which is akin to saying if you were shot by a bullet, and you average the impact on your skin over six minutes, well, there'd obviously - there might be a slight bruising.

So there's a lot of problems. I believe it's flawed, and many, many scientists around the world believe the same thing, which is why they have launched that appeal which I gave you a reference for.

MR LINDWALL: So yes, some scientists might think that.

MS SMITH: Yes.

MR LINDWALL: But I would say that the bulk of scientists don't agree with that.

MS SMITH: Yes. Well, it's interesting - - -

MR LINDWALL: Again, unless I'm qualified in something, I'm only stating what I read, and I'm not an expert in this space - - -

MS SMITH: Yes.

MR LINDWALL: - - - but I'm a natural sceptic - - -

MS SMITH: Yes.

MR LINDWALL: - - - so I don't see why one would expect that a reputable organisation such as the World Health Organisation, the FDA and others would systematically lie about something.

MS SMITH: Yes. They have already labelled it as a possible human carcinogen. The expectation is that it will be labelled a probable human carcinogen. So it's very slowly moving. It's interesting that when people have evaluated studies - and there are thousands - on the effects of radio frequencies, and the studies that are industry-funded come up with a different viewpoint in the main to the studies that have been funded privately, so - and the statistics are that 70 per cent of the studies funded by industry will say no, there isn't an effect. The exact reverse applies to the studies funded privately, and unfortunately there is very little funding for science privately these days anyways, but yes, so there are obviously political forces in play.

MR LINDWALL: Okay. Do you have any final comments you'd like to make on what you've provided today?

MS SMITH: No, except for I'd like to very much advocate for the landlines. I do have some questions, but I understand that that - it will be possible to ask them at the end of this session, is that right?

MR LINDWALL: Questions of - sorry?

MS SMITH: Just - I've got several questions, but I understand at the end of the day today is the appropriate time to ask that.

MR LINDWALL: No, no, what we offer at the end of the day is for people who wish to, to come and make another statement, but when you say questions, questions of whom?

MS SMITH: Of you, so I've got several questions.

MR LINDWALL: Well, you can make a statement, but I'm not necessarily going to answer a question. What - you can ask if you like. I'll listen to them, but I mean, in the end the Commission publishes in its final report what its views are on various topics, and we won't necessarily comment on something we don't have any expertise in.

MS SMITH: Okay. Well, if I may ask several questions then?

MR LINDWALL: Okay.

MS SMITH: Now, responses to the draft report were originally due by 20 January. Now, I noticed later that submissions have continued to be placed on the website.

MR LINDWALL: Yes.

MS SMITH: Now, my question is, can people continue to submit submissions now, or has that time passed?

MR LINDWALL: Well, we always welcome submissions, and I only make the statement that if the report is being published on whatever date, let's say 28 April, and you provide something on 28 April, it's not likely to be taken much account of. So the earlier it is provided, the better.

MS SMITH: So there isn't a set cut-off?

MR LINDWALL: Well, we do have a deadline, but we don't strictly enforce it. But I do note the quicker the better.

MS SMITH: Would it be a good idea if that was perhaps - that information was also put on the website for people? Because I know people reading it right now would think they've missed the boat.

MR LINDWALL: Well, they just phone up and - people have phoned up and asked for extensions, and we generally - - -

MS SMITH: Okay. But I'm just saying, on the website right now, if I was to read it, I would say, because it says submissions were due by 20 January, I would think, oops - - -

MR LINDWALL: Anyway, you've heard now that you may put in a submission after that if you wish.

MS SMITH: Yes, okay, great. I've got another question. By what means were rural Australians advised of this inquiry? I only actually found out about it the night before responses to the draft report were due, and I do read our regional - I live in the country. I do read our local regional papers, two of which are weekly and one of which is monthly, and I never saw a mention of this inquiry.

MR LINDWALL: Well, it was advertised in newspapers, it was advertised to members of parliament, to the media, advertisements. It was - as much as we can. I can't guarantee every individual gets notification of something. How do you learn? But - - -

MS SMITH: Okay. Was it advertised in regional papers?

MR LINDWALL: I guess? Not every regional paper.

MS SMITH: Because given that the impact is on the regions in the main, when I emailed my shire councillor last week, she was also unaware of it, and expressed her

concerns about the ramifications for our shire, and I guess my comment there is it would have been really good if the Municipal Association of Victoria had been advised, because in their role they would have advised all their members. So I'm very concerned that this inquiry hasn't had as high a profile as I believe it should have in our shire.

A number of people that I spoke to - every one of them has expressed disbelief that we might lose our landlines. They've expressed disgust and they've expressed horror.

Now, one last question, and this one you may not be able to answer. What is the government's liability in the event are landlines are no longer provided and a child - and this is obviously in the rural areas - and a child subsequently develops, for argument's sake, a brain tumour, and the development of this tumour appears to be in consequence of using a mobile phone in lieu of a landline?

MR LINDWALL: I think that the fact that most people are using mobile phones to communicate for emergency services purposes would suggest nothing.

MS SMITH: Well, I'm talking about, obviously, in the situation where a child doesn't have a landline - - -

MR LINDWALL: I mean, you've got so many variables in there, it would be impossible to prove a chain of causality in that.

MS SMITH: Okay. Yes. But of course in terms of the emergency situation, that would be only using a phone for a short time. We're talking about using the phone for perhaps hours at a time.

MR LINDWALL: Yes, all right. Anything else you'd like to say?

MS SMITH: That's everything.

MR LINDWALL: All right. Thank you for appearing today.

MS SMITH: Thank you as well.

MR LINDWALL: Okay. I think now I'm inviting George Gordon, is that correct?

MR GORDON: Commissioner, I'm going to have trouble hearing.

MR LINDWALL: Well, I'll speak up a little bit then. You'll have to come over here, if that's all right, because otherwise the microphone won't be able to pick you up. But I'll have trouble hearing. If I don't speak loud enough, please let me know. But if you could just introduce yourself and make a bit of a statement, and that will be perfect.

MR GORDON: Sure.

MR LINDWALL: Would you like some assistance? Thank you for coming today.

MR GORDON: Mr Commissioner, my name is George Gordon. I live at 47 Weir Street, Morling, in Melbourne, and I only came to hear of this hearing two days ago, so I am very rushed in my preparation, and I'll just read from what I have written.

I wish to thank you for allowing me to address you today. My message is simple, and will not take up much time. I maintain that I have a right to access telephone communications. If the landline to my house was removed, I would be forced to use some form of radio transmitter in my house.

I am sensitive to electromagnetic radiation, and any additional radiation would further impair my health. I want to be assured that Telstra will continue to provide a telephone service that does not damage my health. I refer to Telstra's response to the Productivity Commission's draft report on the Telecommunications Universal Service Obligation dated 24 January 2017. In the executive summary, at the eighth paragraph, it states:

> *For example, in light of additional modes of communication offered by broadband, additional voice call latency may be acceptable, particularly if it is at a level that does not impact on public safety.*

Telstra acknowledges that public safety is important, and I would like to know how they will continue to provide a telephone service that is safe for the thousands of their customers like me who suffer from EHS. EHS is electro hyper-sensitivity. I thank you for hearing me.

MR LINDWALL: Thank you very much, Mr Gordon. We have not proposed anything about taking away - - -

MR GORDON: Sir, I cannot hear.

MR LINDWALL: We have not taken away - we have not proposed the taking away of the right to have a fixed line to the home. The NBN, as it is provided, provides a fixed line premises to all premises in Australia, whether it be by fixed line service or fixed wireless or satellite, and you're in Melbourne, so you would get, under the NBN proposal, an NBN service rather than a Telstra service. But otherwise you wouldn't be forced onto a mobile phone, no.

MR GORDON: I understand that NBN is establishing radio transmitters that will broadcast to a mobile telephone.

MR LINDWALL: No, no, no, the NBN is providing for most of Australians a fixed line service to the premises, which is either by fibre-optic cable - you know what - which is an alternative to what you currently have, which is copper, or using the copper network. What I think you're thinking about is what they call fixed wireless, which is a way of transmitting information to the premises in more remote areas or regional areas, not in the cities so much.

MR GORDON: Sir, I - - -

MR LINDWALL: But even in that case, what is in your home would be what you would normally consider a fixed line service. The actual transmission is to a point that's not into the home. So the radio magnetic transmission is external to the house.

MR GORDON: I am an ordinary Telstra subscriber. I know nothing about the technology. I want to be assured that my copper telephone, copper wire to my house, or alternative fibre-optic if that's what technology requires, is maintained.

MR LINDWALL: Well, that's what the NBN will be providing, yes.

MR GORDON: I thought - I thought there was a problem with the government, our present government, saying that that's going to take too long, and we'll speed it up by - - -

MR LINDWALL: What you're talking about is they're moving to - they moved to what they call multi-technology mix, and that means that in some cases, including in my own home, I am relying on copper, because it's called fibre to the node, so I've got my copper line still coming into my home even though I'm using NBN.

That may be your circumstance. I don't know, it depends where you live and the rollout scheme. So that- and I would envisage that over time, once the NBN's rolled out, they will move to fibre optic over time for those customers that want a fixed line.

MR GORDON: I want to be assured that the telephone communication does not require me to use the radio technology.

MR LINDWALL: I think you can be quite assured of that. That's the government policy. And we haven't recommended anything else.

MR GORDON: Well, I can't - I have not the knowledge to comment.

MR LINDWALL: And do you know whether, sir, whether you've been - - -

MR GORDON: Sir, I can have trouble hearing.

MR LINDWALL: Do you know whether you've been contacted by the NBN about a service in your suburb?

MR GORDON: I have been contacted by some character who represented himself as Telstra at five o'clock in the morning saying I'll have to change my - I had to change my account.

MR LINDWALL: I think you should hang up on such calls. That's a scam call.

MR GORDON: I took no action.

MR LINDWALL: Yes, you did the right thing there. There's a lot of scam calls, and you should be very careful of that.

MR GORDON: Yes, at 5 o'clock in the morning, that was.

MR LINDWALL: It's disgraceful, isn't it? Did you have any final comments you'd like to say, Mr - - -

MR GORDON: No.

MR LINDWALL: Any final points you'd like to make, Mr Gordon?

MR GORDON: No. I just want to try and safeguard my health and other people in my condition.

MR LINDWALL: Okay. Thank you very much for coming.

MR GORDON: Thank you, sir, for hearing me.

MR LINDWALL: A pleasure. Did you want to make another point?

MS SMITH: Yes, I just want to - - -

MR LINDWALL: You'll have to come up again and - and then I - did you want to make a - no, okay, I'll - and then - please, yes.

MS SMITH: Thank you. I just want to - - -

MR LINDWALL: It's just in addition to what you've said already, without - - -

MS SMITH: Yes, and I just want to elaborate - - -

MR LINDWALL: Please for the record, just say your name again?

MS SMITH: Janobai Smith. I just want to elaborate on what you said a minute ago to George.

MR GORDON: I have trouble.

MS SMITH: Sorry. I just want to elaborate on what Paul said to you, George. You indicated that - obviously if one is in a - on fibre-optic, that is a very safe technology to be using for phone conversations. However, you did indicate that if somebody was in a fixed wireless zone, that that would be acceptable, and it would be like using your normal phone. I just want to say, no, that is not the case at all. I have tested - I've got a radio frequency meter here today. People living in fixed wireless homes and - this meter would be constantly - and if you go up - it would be constantly going up into the - what is

considered to be the danger zones of EHS. This is measuring - this particular meter is measuring between 200 megahertz and 8 gigahertz, so it isn't measuring all the radio frequencies, and it's measuring the volts per metre and the microwatts per metre, power density.

MR LINDWALL: But the fact is that fixed wireless, the actual focal point of the energy is to a dish that's outside the home.

MS SMITH: That's quite correct, the levels are still very high. In one home I was in, we couldn't get the levels down. The lady finally went and switched off something on her wall to the NBN, and that immediately made this drop down so nothing was appearing - - -

MR LINDWALL: But for the purposes of Mr Gordon here, he's said he lived in a suburb in Melbourne. He should be under fixed - - -

MS SMITH: Absolutely, he won't have a problem. He'll be on fibre-optic.

MR LINDWALL: That's all - - -

MS SMITH: But I just want to say that for people accessing voice over NBN wireless, it is a problem. One man phoned me up. He very much wanted internet connectivity. He got the NBN fixed wireless connection. He ended up, he told me, having to rip it out because it affected his health so badly.

MR LINDWALL: Okay, well, thank you for that. Thank you again. So no one else wants to present? I think we've lost all our customers now. So thank you for that, and - - -

MS SMITH: Thank you.

MR GORDON: Do I understand that I'll be getting a fibre optic cable?

MS SMITH: Yes, and that's safe. I wish I had it. Unfortunately I'm on Sky Muster.

MR LINDWALL: Okay. Well, I'd like to adjourn the proceedings, and the Commission will resume tomorrow in Melbourne for hearings via teleconference. Thank you, everyone.

MATTER ADJOURNED AT 12.15 PM UNTIL
WEDNESDAY, 8 FEBRUARY 2017 AT 8.30 AM