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TRANSCRIPT OF PROCEEDINGS

PRODUCTIVITY COMMISSION

INQUIRY INTO RADIOCOMMUNICATIONS

DR D. ROBERTSON, Presiding Commissioner
DR N. BYRON, Commissioner

TRANSCRIPT OF PROCEEDINGS

AT SYDNEY ON TUESDAY, 23 OCTOBER 2001, AT 10.33 AM

DR ROBERTSON: Good morning to you all. Welcome to the public hearing for the Productivity Commission inquiry into the management of radiocommunications spectrum. My name is David Robertson and I'm presiding commissioner on this inquiry. My fellow commissioner is Dr Neil Byron.

The inquiry started with a reference from the assistant treasurer on 16 July this year. It requires the commission to review radiocommunications acts and the market based reforms and activities undertaken by the Australian Communications Authority. It's part of the national competition legislation review process.

We've already talked informally to a range of organisations and individuals with an interest in these issues, and submissions have been coming into the inquiry following the release of the issues paper in August. We're grateful for the discussions and the valuable opinions we have heard from people during those informal discussions, and we feel much more comfortable about the inquiry having heard from principal parties.

The purpose of these hearings is to provide an opportunity for interested parties to discuss their submissions and their views on the public record. Following these hearings in Sydney today and tomorrow, there will be hearings also in Canberra and in Melbourne. We will then be working towards preparing a draft report for public comment, which we hope to release in February next year, and we will invite participation to another round of hearings after interested parties have had time to look at the draft report.

Now, we like to conduct all hearings in a reasonably informal manner, but I remind participants that a full transcript is being taken. For this reason, comments from the floor cannot be taken because they won't be heard by the microphones. But if anybody does want to speak from the floor, I will be pleased to try and find time during the proceedings or at the end of the proceedings for them to do so.

Participants are not required to take an oath but are required under the Productivity Commission Act to be truthful in their remarks. Participants are welcome to comment on the issues raised in other submissions, which are of course available on the web site. The transcript will be made available to participants and will be available from the commission's web site following the hearings. Copies may also be purchased using an order form available from staff here today. Submissions are also available.

Now I invite speakers to give a summary of their main points, rather than to

So the suggestion we would like to make is to make some provision for that sort of radio sensitive zone, whatever you like to call it, around the radio astronomy facilities - a defined area around there - where the notification and consultation will be mandatory. Up to now we have been sort of voluntary, but it doesn't seem to be working. We're not asking for forced protection and specific limits or claiming the spectrum for us. We just would like to be consulted and to find an acceptable technical solution so that we and the commercial operators can operate. Of course, the ACA is always the final arbiter in all these issues.

Moreover, and in line with what people are doing overseas, we would like to offer a free service to the commercial operators nearby, where we would be an evaluation and advisory service. So if they have a proposal to put a transmitter somewhere nearby, they can come to us even prior to putting in a licence application and we will work with them to meet the technical specifications so both they and we can work successfully and we are willing to put the resources to provide that for the industry. That's the main point, that we like to have some work done.

The other point I like to come to is the non-commercial usage part of the legislation. I had looked at the Radiocommunication Act 1992 and radio astronomy is barely mentioned. It's only mentioned in a couple of places. But it seems to be lack of recognition in the act itself and in the past this lack of recognition may have some detrimental impact that other people are not really aware of, how radio astronomy operates. And again, radio astronomy operate as a national facility. We, the CSIRO, runs the facility on behalf of the government for the whole of the Australian astronomy community.

In fact the facility is offered to the world community and anybody around the world can come and observe at our telescopes, and of course we can observe in overseas telescopes. So it's open worldwide access to radio astronomy facilities and we do not charge anyone for observing the telescope, so there is no mechanism to recover any costs. Radio astronomy perhaps will fit better as a community activity or a public service type of usage of the spectrum and that could be possibly recognised in the act where the other services like defence and emergency services are recognised, as non-commercial users.

The third point is that we are doing some research in how to clean up the spectrum, how to do interference mitigation. But a lot more work is needed in that area of interference mitigation techniques, which will benefit not just radio astronomy but all the other services interfering with each other as well. The ACA has some technical expertise but probably not sufficient to cover the wide spectrum of all the services. So a suggestion from us would be that a mechanism is provided for the ACA to make funds available to the industry or research institutions to actually do some of this research and development, for us particularly interference mitigation or other techniques, and a suggestion perhaps that some of the licence funds that are coming into the government be used for that purpose.

Another point that the commission ask is to comment about the future of radio telecommunications. As far as radio astronomy is concerned, the big thing coming in the future is a square kilometre range which is a very large collecting area of one kilometre by one kilometre, which has extremely high sensitivity and of course will be sensitive to interference as well. It will cover frequencies from around 100 megahertz to up to 20 gigahertz, so a very big part of the spectrum wherever telecommunications services exists. They will build in interference mitigation techniques like multi-beams and things like that. But there's still need for something like a radio quiet zone around there.

The suggestion is that this sort of telescope built in a very remote area and it's a multinational consortium that looks there and is going to cost a billion dollars plus to build such an instrument. Australia is a leading candidate for a site for this and there has been some work done in Western Australia trying to identify various isolated sites that this work can be done. But that's something that will come in the future and the OECD taskforce on spectrum issues is actually looking at the problems of how to define that kind of radio quiet zone.

So I will come finally to my summary and the proposal we make, that the radio astronomy service is a passive service which has some special needs. It doesn't quite fit in the current system and the proposals we try to make is that the act to provide some mechanisms for, first of all, radio-sensitive zones around radio astronomy facilities which had a mandatory consultation process; second, the recognition of radio astronomy in the act perhaps as a community service, and the third, the provision of research and development funding for research and interference mitigation through the ACA. Thank you.

DR ROBERTSON: Thank you, Dr Tzioumis.

DR BYRON: Thank you very much. It really is very interesting. I was wondering, the things that you're concerned about with regard to the interference, is that already a major problem with the telescope facility or is it something that you're afraid might become much worse in the future?

DR TZIOUMIS: I guess the answer to that is both. There have been problems and we had to move bands and our receivers' working bands, for example the MDS service at Narrabri a couple of years ago. They started transmitting a nearby band and effectively wiped us out from that part of the spectrum. The irony is, when we talked to the services that they knew ahead of time they could have used another part of the spectrum a little bit higher up and wouldn't have affected us, and this is the kind of thing we're trying to catch. So we are already affected and we're trying to move our bands, use filtering, mitigation techniques, throw the data away if we have to at the end, and that affects the science. But that's the price we pay, is by operating in their bands effectively. What we're trying to suggest is some mechanism to be provided, of this coordination zone or quite zone or sensitive zone, where we can nip

those problems in the bud, to find a solution that's acceptable to the services and acceptable to us as well.

DR BYRON: The Narrabri example is probably a good one of what I was thinking about. The radio sensitive zones or the radio quiet zones, I can understand very clearly the need and the case for that, from the telescope point of view. Is there any other party that is adversely affected if those sorts of quiet or sensitive zones were put in place, or is it possible, like with your Narrabri example, that they can still deliver the same service to their customers without causing the harm to you, if you work it out in advance?

DR TZIOUMIS: Yes. We believe that we both can operate quite successfully. Quite often it means moving the tower. Instead of building it here you build it over here so it doesn't beam at the telescope. You change the technical characteristics of the antennas which beam in a particular area. Instead of putting it on this hill you put it on that hill. The experience overseas, as I said, at Greenbank is that they say almost in all cases they always find a technical solution of that sort. So we believe that in the majority of cases that that would be the case, that they wouldn't affect adversely. In a similar case the FCC in the United States requires the operator to make a reasonable attempt to address the concerns of the telescope. If he fails then the telescope just has to put up with interference. So we don't ask them for a veto power. We just ask them for a consultation to find an acceptable solution, without undue cost to the operator, and we are willing to help in that respect ourselves.

DR BYRON: I guess I was just wondering if there would be any sort of black zones or blackout zones where there was no radio or TV or mobile phone coverage because they were too close to a telescope.

DR TZIOUMIS: I guess we can see that - they are already in our own bands, in the bands that there's radio astronomy bands there are sort of areas that if a transmitter is nearby we can see the telescope, we can see the mobile very easily. One of my colleagues made the remark that if you put a mobile telephone on the moon the radio telescopes will see it probably as the brightest source in the sky. So that's how sensitive our telescopes are. Quite often we are not actually even concerned about pointing our telescopes in that direction. If a section comes in our beam of the telescope, will wipe us out and we just have to throw the data away. We accepted that already.

Quite often them come on the side, in the side lobes of the telescope, and even that, we are so sensitive that they can actually affect us. So around the telescopes they are relatively isolated areas so we don't have - and we ask people to turn their mobiles off when they come on site for example. We don't use mobiles on our sites as it affects - - -

DR ROBERTSON: Sounds like the sort of place I could live. Could I follow up with another question?

DR TZIOUMIS: Sure.

DR ROBERTSON: It strikes me that, you know, you've only got a few sites where these problems occur.

DR TZIOUMIS: Yes.

DR ROBERTSON: And the ACA must know about them because they've got a footnote. So when it comes to providing a licence for any particular reason in a region where you've got the telescope, would it be terribly difficult for the ACA to actually say, you know, when they're auctioning or providing a licence across the counter, "You realise this is a sensitive area in terms of Narrabri or Parkes," or whatever?

DR TZIOUMIS: That was the whole idea of this AUS87 footnote in the spectrum, which not only covers bands like the radio astronomy is allocated but if you look at the spectrum plan "nearby bands will have AUS87". If you look at AUS87 there is a telescope in the locations which we mentioned, but it doesn't seem to have worked so far. It doesn't matter what we do, it seems - a suggestion was that that goes to consultants and they probably only look at their licence data base, which has all the licence in there. We are not entitled to have a licence outside the very narrow bands that are allocated to radio astronomy.

So it doesn't seem to be visible enough at this stage around those areas. I would like to find - exactly this is the point that we're trying to achieve, for the ACA to tell the people that are applying for a licence, "There's a telescope nearby," and as I said, the overseas people require the people to put the applications they put into the FCC in the States or the ACA here, to send out a copy and that's usually sufficient for us and I think there's three weeks. Within 20 days they reply if there is a problem or there is no problem. So that's all their consultation process. There's no trying to stop the operator operating - within 20 days will reply whether there's a problem and they're trying to find. But up to now that hasn't seemed to have worked with the current mechanisms that exist in the ACA, the spectrum plan, the licences. It doesn't seem to come in. Maybe it's because outside consultants are using the licence. I don't know why it hasn't worked. That was our hope and that's why we've been pushing that. But it's not working.

DR ROBERTSON: Like I said, there are two ways of doing it. One is to tell the potential holder of the licence that you're within range.

DR TZIOUMIS: Yes.

DR ROBERTSON: And the other one is to tell you that this has happened.

DR TZIOUMIS: Exactly.

DR ROBERTSON: They don't do either of those?

DR TZIOUMIS: At the moment, no. Well, they don't tell us and we find it out after they start transmitting and when we talk to the commercial operators they say they don't know, they did not know we were there, and we have special needs in that band because there wasn't a licence for that band. But even when we offer to buy a licence we are not - by the legislation we cannot buy a licence outside the radio astronomy bands because they're not for that service. So the current mechanisms don't seem to - we seem to fall in the cracks somehow.

DR ROBERTSON: Yes, exactly.

DR TZIOUMIS: This is exactly the issues we're trying to address: how do we get us out of those cracks so we can be visible either way?

DR ROBERTSON: Have you talked to the ACA?

DR TZIOUMIS: Yes, they're very aware of that and, as I said, we talked to them. We just amended AUS87 to include the new receivers we put in the telescopes. We put a preamble in the spectrum plan and put in - with a page describing radio astronomy. But how much success? I'm doubtful because we've given the history, it seems not to be taken into account. I don't know whether it's lack of resources by the ACA to police that sort of thing or how far it goes. I'm not sure how to get it in there. That's the frustration we have, trying to get it in there.

DR ROBERTSON: It sounds a very simple process, to put it in the computer, to me. But maybe I'm being naive.

DR TZIOUMIS: And the spectrum plan is on a computer. It's a big plan and it's already there.

DR ROBERTSON: There are these dots, Parkes, Narrabri, Molongolo, whatever. It's certainly a question to raise with the ACA.

DR TZIOUMIS: I mean, as I looked at the legislation very quickly I'm not quite sure where there's provision of legislation to declare a zone a sensitive zone or something. So a suggestion was, perhaps in the act itself will give the ACA the tool to declare a zone, say, "This zone, you need to notify the telescope or you need to take into account that a telescope is there." I'm not sure whether the mechanism is lacking within the ACA Act or whatever, where to address that problem. But it's exactly the problem we are frustrated with.

DR ROBERTSON: I must say it sounds to me as if the ACA has found some reason why they don't want to do it. But we'll get to - - -

DR TZIOUMIS: I have to admit that they are helpful when I talk to them always. They wanted licence from us. We bought licence where we could buy licence. But that doesn't help either as far as our experience so far. The same thing at Parkes telescope. Quite often we use their development applications in the local paper to find out what somebody might be doing, so we can find out what's happening before and there's mines nearby, and that's how we usually find out. We have our own people looking at that, but it seems a very inefficient process. Quite often, as I said, we would find after the event, after it has already been gazetted in the local government and it's a bit too late in those things to make major changes.

DR BYRON: Can I change the subject slightly?

DR TZIOUMIS: Sure.

DR BYRON: You mentioned in your opening comments and in the submission about the possible funding for additional research on the spectrum and that maybe this might come out of some of the fees that the ACA collects. The sort of research that you're talking about, how much of that is of potential sort of commercial value or proprietary research and how much of it is purely, you know, public interest, pure science and basic research?

DR TZIOUMIS: A lot of it probably more in the public area, but it's specific. All the services have to meet certain criteria so they don't interfere with each other. So this kind of research is being done quite often. We are doing some research ourselves on this interference mitigation. It is hard to make better filters, that kind of thing for interference mitigation for us. But the other technical issues which are probably a bit more fundamental or even specific to a particular frequency which could be of commercial value to the operator, but when the operator goes for a licence to the ACA some of that data doesn't exist at this stage, so nobody can actually make technical evaluation of how much of a problem that will be or will not be, how easy it will be to stop the interference or whether it be affected by the weather or the transmission will be affected. That sort of thing I think Carol had some more in her submission on the kind of technical problems that quite often we have to address. The ACA doesn't have enough people or enough expertise to address them and often it costs money for the operators to address and quite often they come up later when there are conflicts and it would be nice to have it ahead of time.

DR BYRON: I guess I was just trying to think through all the different types of research that you might be doing and I can imagine some purely astronomical research which is just of purely scientific interest.

DR TZIOUMIS: Sure.

DR BYRON: There is some research that may be of potential, you know, a billion dollar pay-off to equivalent manufacturers in 10 years' time or something. But I

imagine that the equipment people would have their own R and D labs to do - - -

DR TZIOUMIS: There is some of that done.

DR BYRON: So in between you have an area of research that might actually be potentially helpful in the management of the spectrum and then filters and subdivisions and all these sorts of things.

DR TZIOUMIS: Yes.

DR BYRON: Now, is that something where the ACA could say, "We as the beneficiary of that sort of research want to basically give a grant or to commission you to conduct research, a million dollars for five years to solve this, this and this problem for us."

DR TZIOUMIS: That is the idea. For radio astronomy we are a bit more narrow in interference mitigation, but I think the other researchers - perhaps I could ask Carol to address on that question directly, where they do a lot more research in different parts of the spectrum. That is exactly what the CAS could do.

DR BYRON: I guess what that is leading me to thinking is whether you need a mechanism where there is an automatic X per cent of the revenue collected goes to CSIRO for research, or whether you just need a grants application sort of process where any research organisation can say, "We propose to do research on this, this and this which would be very beneficial to the ACA. It will cost you a million dollars, do you want to pay for it?" which is quite different from having an automatic subvention of some percentage of revenue.

DR TZIOUMIS: Could I ask Carol to comment on that?

DR WILSON: I think in the first instance we are certainly not proposing that the proportion of the spectrum revenue go to the CSIRO to do this, because there is a lot of expertise in universities and organisations such as DSTO which could address it as well. So we are not looking to line our own pockets.

DR BYRON: I wasn't accusing you of that.

DR WILSON: But on your second point, yes, I mean it is an aspect where organisations could propose this to the ACA. My experience has been that when we have done that the amounts of money that are required for some of these is substantial and the ACA have not allowed for this in their budgeting process and it seems that the direct beneficiary of this is the income of revenue from spectrum sales and therefore ploughing some of that back into a pool of money that the ACA can draw on to fund this research seems appropriate. I see it as being controlled by the ACA to be able to fund research as necessary for future requirements.

DR BYRON: Did they basically have a small pool of money set aside for that, a pool of money set aside - - -

DR WILSON: Yes.

DR BYRON: - - - for their own purposes in improving the technical efficiency of spectrum management?

DR WILSON: Yes.

DR ROBERTSON: One of the difficulties we are going to have is dealing with community services. Everybody in the community service area thinks they are crucial and therefore they should have access to whatever they feel they need in terms of spectrum and they shouldn't pay fees and licences and so forth. In the context of the telescopes, something that strikes me is that there are large sums of money involved in setting up the telescope. You mentioned two sums in your presentation. In order to keep the market operating, I would have thought there was good reason why the telescope should actually purchase licences and that way we can actually ensure that the resources are best used.

DR TZIOUMIS: Sure. In my submission I didn't actually really ask for an exemption from the licence fee. We are quite happy to pay the fees. So in our community service we are asking for some recognition, rather than for some monetary benefit to us. The licence hasn't really helped us in what we were trying to achieve, the protection, but at the moment when I look at the act itself, radio astronomy is hardly mentioned, almost no mention at all. They mention in a couple of places radio astronomy and meteorological observations and that's all. It seems that there is a measured use of the spectrum and we are not asking for the actual spectrum. The spectrum is allocated by the ITU worldwide and we are quite happy with that part of it. The other part of it we are only asking for consultation. So that doesn't really get addressed by the licence.

The only part of this community service for us was part of recognising us in the act that we exist. We don't actually ask for anything, special consideration or extra bands or anything, as we have the bands there, we operate outside there, we are on a totally non-interference basis with anybody else. So for us it was more the lack of recognition within the act that radio astronomy is a mentioned service, it has quite big parts of the spectrum and the high frequencies of 75 gigahertz and above, radio astronomy has huge parts of the spectrum allocated by the ITU. The service is not using them at the moment at all and the problems, because of the shorter wave lengths there, the interference problem is not as bad. But the radio astronomy goes up to 1 terrahertz, so we are already operating well away, so we are not actually asking for any extra spectrum or an exemption from fees or anything like that. We are only asking for some recognition as a service in the act, so we are more visible to people and may alleviate the other problems we have, like people don't really know us.

DR ROBERTSON: I think that is very helpful, thank you.

DR BYRON: Just one clarification and pardon my technical ignorance, but my understanding is that for radio astronomy you have very small slices at various points over the spectrum.

DR TZIOUMIS: Sure.

DR BYRON: Are the little slices that are allocated for radio astronomy, are they really sufficient to sample the adjoining parts of the spectrum where there is all these commercial uses, all the emissions, interference? Is it possible that there is something significant going on, but it's in part of the spectrum that is allocated by the uses and you can never get clear uncontaminated access to listen to that bit?

DR TZIOUMIS: Yes, certainly that is true. The reason that these narrow bands quite often have been allocated is because there is a particular frequency of a molecule in the sky that we are looking at. As I saying before, if you look at the distance they get shifted and so they will be in a part of the spectrum and we cannot look at them. So there is part of the universe that already we cannot look at. If you look at a very early universe, those frequencies come way down into where the communications are and astronomy started at a few megahertz and now below 1 gigahertz it's almost impossible to do radio astronomy. These new telescopes - that's why we try to make big telescopes somewhere away in a remote area to get away from them, but then you have the satellites going overhead. This is something we are trying to address in the ITU, how even the technique of trying to turn the satellites off in one place on earth so it is quiet.

There have been suggestions of putting telescopes on the dark side of the moon of course, where there is no interference. But even there when they have a space craft going to Mars, then it transmits back to get interference. So you can't escape in some ways and so we are trying to observe in those other areas, there are parts of the spectrum that are completely blacked out. The good thing is that as communications technology is developed and people find a different way of doing things, putting it on a fibre or something and the spectrum is vacated, it can be reused. So there is hope for the future in some ways if we find different ways of using things, we can reuse the spectrum, we can look far into the universe and other areas we cannot look now.

But it is true, there are areas that we just cannot look. We try to look, we excise the interference, but the sensitivity quite often is not enough to see you get a look and quite often we fail. There have been occasions that the interference is so strong that our receivers connection gets damaged if we don't turn them off, or be so overwhelmed from nearby bands we have to switch the whole band somewhere else, because we cannot operate in that area.

DR ROBERTSON: Thank you very much. Dr Carol Wilson, your interest is

slightly different, you are from the CSIRO. Would you like to make a few comments?

DR WILSON:

DR BYRON: Is this actually a very common problem?

DR WILSON: I suspect that this is increasingly a common problem throughout the world. Perhaps Tasso could - - -

DR TZIOUMIS: Yes, I think it is a general problem, but I think it is probably often solved at the local level by the ACA or its equivalent the FCC. What I would envisage is that the legislation provides the ACA with a tool to declare a site as a sensitive site and the way I would have thought is that they would publish it the normal way they give a licence out and then the people that are affected have a chance to comment and everything else. Those things would be sort of asked for and done by negotiation with industry, the same thing as radio astronomy. We will ask for a right, say, to be an area and we will talk with the people affected there before you define it. So what I have seen from overseas, this has been done very locally there, but my understanding is need to provide the tool to say there is such a thing that the ACA in consultation with industry or whatever, can declare an area as sensitive zone with defined limits and defined criteria which can be defined by the industry and the participants.

DR ROBERTSON: Somebody is probably going to say you could also move your sensitive site somewhere else.

DR WILSON: Yes, they probably could, but the national management laboratory at Lindfield and the measurement facility at Marsfield both represent substantial government investment in long-term research efforts.

DR BYRON: They probably were fairly remote once.

DR WILSON: And they were fairly remote once.

DR BYRON: Coming back to the need for research that might help with the special management functions, something other submissions have suggested to us, that over the last decade or so a lot of the people within the ACA and its predecessors who had really strong technical background have been attracted off to work in the private sector, so the technical and research capability that may have once existed within the ACA is being progressively eroded a bit. Have you any opinions? I mean you don't have to answer that if you don't want to.

DR WILSON: I am aware that quite a few people with technical qualifications with good technical background, research background, have left the ACA. There are also people still at the ACA with good technical skills, but it is more a matter of the resources and the ability. The people with the technical expertise at the ACA are largely doing regulatory jobs. They are not full-time researchers with extensive test facilities and measurement equipment and the resources to carry out the long-term research. But I think they do have the technical capability to evaluate which research

would be useful. So I think that is the issue of outsourcing that then to universities.

DR BYRON: I was just wondering if they might have once had the capacity to do a lot more of this in-house, but now they are in the position where if they want that sort of research done it has to be outsourced, which means that they have to have a bundle of money that they can use to commission that sort of research.

DR WILSON: I think that's essentially the effect. The actual mechanism is that the Department of Communication, Information Technology and the Arts previously had a communications laboratory which could undertake research of this type and did a considerable amount of research for example in satellite broadcasting and issues to deal with that and that communications lab has now been closed down and those people have gone on to other technical and research organisations. So, yes, in that sense the government as a whole has lost that research capability in that area.

DR BYRON: They haven't replaced the in-house capability with a pool of funds for outsourcing?

DR WILSON: No.

DR ROBERTSON: What about overseas? Is there a tendency to transfer things from the public to the private sector?

DR WILSON: There are similar problems overseas and it's a growing problem with the increasing congestion of the radio spectrum. I'm involved in some international committees for radio propagation and I know that my colleagues around the world are all struggling to find adequate resources for the research. I know in the US the Department of Commerce which oversees the NTIA has some research capabilities in-house and sponsors research in various locations. So there is some precedent for example in the US for this sort of thing, but beyond that I'm not certain.

DR BYRON: How much of this sort of research has to be done in Australia by Australian institutions and how much can we ride on the coat-tails of research that is done in America, Europe, Japan et cetera and just do adaptive - - -

DR WILSON: There is a certain amount that can be done or results can be based on what is being done overseas. The issue I have mentioned of interference at 5 gigahertz between wireless local area networks where it is characterising building materials, there is some limited amount of work being done overseas in this area. The international community, the International Telecommunications Union, is trying to organise that. I chair a subgroup that is looking at propagation for short-range systems and we're collecting as much information as we can internationally. It's just a matter of the total research effort worldwide being directed at this.

In that particular instance my feeling is that there's a reluctance from industry to address that, because the results of that have to do with the interference between

two systems, not the improvement of the performance of either system individually. So they have a difficult time justifying, from their own internal business case, funding the research.

The one I think that's particularly relevant though to be done in Australia is the one dealing with climatic effects, because here there are, as I said earlier, some very good models for predicting rain effects based on data in temperate regions, based largely on European and North American studies, and they work very, very well for Europe and North America but they do not perform well for Australian climates. Within the international community Australia and Brazil are two of the countries with tropical regions which are doing any work in this area at all, and Brazil is doing quite a considerable amount of work. Australia has done some work in this area. James Cook University in Townsville has had a program for some years. But again that's just characterising one region and it's something that needs to be done across a wide range of climates.

DR ROBERTSON: I suppose one of the reasons why industry commercial interests might start to do research would be in areas where the spectrum gets congested, whereas if they're in areas where there's plenty of space between used frequencies then they have no interest in the interference issue at all.

DR WILSON: Yes.

DR ROBERTSON: Good. Do you have any other points now?

DR BYRON: Not that I can think of at the moment, no.

DR ROBERTSON: Thank you both.

DR BYRON: Thank you very much.

DR WILSON: Thank you very much.

DR BYRON: That was very informative.

DR ROBERTSON: Yes, that's a good start, thank you.

DR WILSON: Thank you.

DR ROBERTSON: We can now adjourn until 1.30.

(Luncheon adjournment)

DR ROBERTSON: Right, I reopen this hearing on the Radiocommunications Act and competition policy. We have with us first Noel MacDonald from Noel MacDonald Productions. What we would like you to do is to summarise what you think are your key points so that we can then get into discussion. I'd just say one thing in advance, which is that we're not about programming. We're not inquiring into the nature of the programs you produce so we won't comment on anything to do with that. We're about spectrum and your access to licences and so forth.

MR MacDONALD: Yes.

DR ROBERTSON: So would you just announce who you are so that they know on the record exactly who's speaking, thank you.

MR MacDONALD: My name is Noel MacDonald. My company is called Noel G. MacDonald Productions Pty Ltd. I'm here today to talk about the potential of the radiocommunications spectrum. I'd like to state that by certain licences being granted to create a specific network that played more Australian content, a huge industry could be created from music copyrights being exported to the world.

Australian musicians need an outlet to promote their products so that they can create a high chart position in Australia to then take it to the overseas market. I work in commercial radio and I'm very aware of commercial radio and I'm not here to comment about commercial radio. It has its function and that is valid. But I actually feel that there is a whole component missing here in Australia and it's a cultural issue but it also a financial ramification. That financial ramification is sales of music copyrights and sales of live performances to Australia and to the world.

Australian artists are regularly discriminated against by commercial radio, but it is not commercial radio's function to necessarily play Australian music. They have a quota of 25 per cent to play, which can be met between midnight to dawn. They have a new release component of that which is 25 per cent of the 25 per cent, which is about 6 per cent at large which is new release. The new release issue is the major issue. There's no point in playing a copyright that's 20 years old. That's not necessarily serving the industry that exists now.

The reason why I thought it was best to speak before the Productivity Commission was that in fact it's the productivity that could be gained by the radio spectrum being utilised slightly differently that created a network that actually was focused on playing 50 per cent Australian content, and in the contemporary context maybe 50 per cent of that contemporary context would be Australian and the entire content would be new release. That's what the industry requires. It would take the heat off the commercial radio stations. They could just do what they need to do to create their profits and to pay back the banks the money that they have needed to borrow to pay for these incredible licence fees.

So I believe that Australia culturally and the Australian music industry would

greatly benefit from open narrow cast music radio becoming a very important component of Radiocommunications Act. Thank you.

DR BYRON: Thanks. Let's just accept for now the content argument and the merits of the case that you're making about new release and Australian content and so on. As Dr Robertson said, that's not really part of our brief. But given all that, what exactly is the problem: that there's not enough licences being issued, there's not enough spectrum for licences to be issued, there are other applicants for licences who have been rejected?

MR MacDONALD: No. We have basically community radio which may well play aspects of Australian music, but it's really a variety of different formats all put onto one format. We have commercial radio which is either playing golden oldies or almost golden oldies or some new release component. But there's not a format out there that exists where it actually exists to play and promote Australian product to Australians.

DR BYRON: Okay. If we accept for now that that niche exists and there's a demand and a case for it and all the rest of it, what exactly is the problem? Why isn't it happening? Is there somebody who's declining to issue the necessary licences or to make available the necessary spectrum?

MR MacDONALD: I think that the ABA has been unable to clarify what is possible on open narrow cast radio in relation to music. It's always been a contentious issue between commercial radio and the ABA - what is classified as open narrow cast music format.

DR BYRON: Yes.

MR MacDONALD: At the moment jazz and maybe country slip under the wire but contemporary is really cut off. What I'm suggesting is that country and jazz, if they are to exist, should have a 50 per cent Australian content if they are open narrow cast licences.

DR BYRON: You see, we're not here to look into what the ABA is doing or not doing or failing to do. If there was a problem in the sense that there was not enough radio frequency spectrum available after all the commercials and nationals and community radios have been allocated all their licences and matching spectrum, I can imagine where there might be something we can look into. But if it's simply a question of the ABA doesn't think that this is a priority or whether they don't understand that there's a niche there then, as I say, we're not here to investigate the ABA.

MR MacDONALD: Well, being the Productivity Commission, I was actually extending - basically my premise was radiocommunications spectrum, how could radiocommunications spectrum be better used and what could we gain by using the

radio spectrum in a different way.

DR BYRON: Sure.

MR MacDONALD: Now, yes, that has a programming element, but it's really a philosophical element as to what is the radio spectrum for. Yes, it's for the sale of commercial air time to businesses, it's available to the community. But I'm saying another component of that should be a very serious acceptance that Australian music should be on the radio spectrum. Yes, we can go back to it being an ABA issue, but I also believe it's a Productivity Commission issue and an ACA issue relative to the act.

DR BYRON: Well, I mean, we're conducting this inquiry under particular terms of reference which basically look at the Radiocommunications Act and the performance of the ACA, and that relates particularly to the allocation of the use of the spectrum. For example, if you were arguing that there wasn't enough spectrum available for open narrow cast radio because so much had already been given to the commercial broadcasters, then maybe there's something there that we could look into. I'm just trying to explore - - -

MR MacDONALD: Well, okay, I put that premise forward then: that there's not enough attention given to open narrow cast radio, high-powered open narrow cast radio, for this function.

DR BYRON: Yes, okay.

DR ROBERTSON: In that case would you argue that maybe the question of allocating frequencies should go back to the ACA and not be the prerogative of the ABA, as it is at the moment for broadcasting?

MR MacDONALD: Possibly under open narrow cast, yes, because I think open narrow cast has a cultural component to it and it has a financial benefit component to the music industry and the live entertainment industry. I don't think that just because we've sold off a massive amount of spectrum to commercial radio, we should also then not allocate a certain amount of the spectrum for this industry to grow.

DR ROBERTSON: Yes, but that would have to be outside the broadcasting frequencies as they are at present, apart from the bit that's set aside for open narrow cast.

MR MacDONALD: Well, possibly the 88.0s could be reallocated and turned into larger high-powered open narrow cast for this function.

DR ROBERTSON: I think that still becomes an ABA issue, because it's frequency that's set aside for them as I understand it. Is that right?

DR BYRON: Yes.

MR MacDONALD: I thought the ACA hands out the 88.0s.

DR BYRON: Okay, I'm not sure of that. But that's right on the fringe of the FM band, is it?

DR ROBERTSON: Yes.

MR MacDONALD: Yes, but it's sufficiently inside the band, so it's not like off the dial. It's like right at the start. I just think that it should be an ACA issue, an ABA issue, a Productivity Commission issue and a government issue - that there is a dormant industry and it's the music copyright industry and it's dormant because there's not enough promotional airplay for Australian country music artists, jazz artists and contemporary. I believe that we're infiltrated by international copyrights day and night and we should have some network that is committed to promotional airplay for Australian product.

DR BYRON: Do you think that would be commercially viable or do you see this as a sort of a break-even community service type - - -

MR MacDONALD: Well, I see it as probably a private business that would sell hourly sponsorship and that would operate from one studio and satellite drive to a multitude of transmitters around the country. So it would be like run on the smell of an oil rag to probably succeed, but its function would have a myriad of benefits to life musicians, independent record companies, management - you know, all the infrastructure that goes around the music industry.

DR ROBERTSON: Yes, I've just checked my notes and in fact low-powered open narrow cast - the licences are issued by the ACA.

MR MacDONALD: Yes.

DR ROBERTSON: It's the high-powered open narrow casts which are issued by the ABA. That presumably means all you have to do if you want to use low-powered open narrow cast would be to apply to the ACA.

MR MacDONALD: Well, I'm in the process of putting a consortium together that will probably do that. What I'm here today to really make the point of is that it should become a cultural imperative for the ACA to work with any parties that have this sort of an agenda, to play Australian music copyrights to Australians, to lift the awareness of these acts, whether they be country, contemporary or jazz, and work with them to create this network and to create this promotional possibility.

DR BYRON: Doesn't that put a content responsibility into the ACA where at the moment it doesn't have that sort of responsibility? The ABA does the content stuff,

as I understand it.

MR MacDONALD: That's true. I actually believe the only issue that the ABA would have with the format that I'm proposing on page 2 there would be the contemporary issue and that's where radio stations like the 2DAY FMs, the networks like DAY FM and Nova would have a problem with that format But they're not willing to play a 50 per cent Australian content, so I'm just hoping that the ABA and the ACA and the government see the benefit to the community and potentially to the economy.

DR ROBERTSON: Has the ACA rejected any licence, do you know?

MR MacDONALD: No.

DR ROBERTSON: There has not been an application?

MR MacDONALD: No, not yet. It's about to be. I just thought I'd come here today and make my case before we submit it for licences. But at the moment we can only really submit for low-powered open narrow cast, which is fine. But to create the sort of network that I'm talking about we'd also need to ultimately apply for high-powered open narrow cast and the only issue yet again is still this contemporary component.

DR ROBERTSON: If you want to use the high-powered you've got to go to the ABA.

MR MacDONALD: That's right Look, I think I've made my point. It's really, the ACA should actually basically - and the Productivity Commission should see that part of the function of the spectrum should be to promote Australian music and by promoting Australian music you're promoting Australian culture and you're potentially creating export product.

DR ROBERTSON: This is the most common plea that we get. People all over the community have said their interest, you know, should overwhelm everything else.

MR MacDONALD: I understand.

DR ROBERTSON: It's very difficult and community services in general are difficult to build into a system which is limited. There's a limited number of stations that can be operating at any one time and a limited amount of spectrum to be allocated. One of our biggest problems is going to be: how do we deal with this whole aspect of community services, starting with emergency services at one end to government services at the other, all of which are required or are declared to be essential. So, you know, yours fits in with that bunch of things. So it's only one of many that we'll be looking at in this.

MR MacDONALD: Okay.

DR ROBERTSON: I think to make your case, probably the first thing to do would be to apply to the ACA for a low-powered narrow cast and see what reaction you get. Did you say you hadn't applied to the ABA either for the high-powered?

MR MacDONALD: No, the ABA is actually in the process right now of clarifying the criteria of open narrow cast. This has been a nebulous area for quite a while, so they've asked for submissions and that's actually in process right now, where they're clarifying the criteria of what open narrow cast actually is.

DR ROBERTSON: Okay. Well, we'll take it on board, along with all these other things we have to.

MR MacDONALD: Yes.

DR ROBERTSON: Neil, do you have any further questions?

DR BYRON: No, thanks.

MR MacDONALD: Okay. Well, thank you very much for your time.

DR ROBERTSON: Thank you for coming along.

DR ROBERTSON: I reopen this Productivity Commission inquiry. The commission is required to review the Radiocommunications Act and the market based reforms and activities undertaken by the Australian Communications Authority as part of the review of the competition policy legislation. We now turn to Cable and Wireless Optus for their contribution. Would you mind introducing yourselves when you first speak so that we've clearly got it on record as to who is speaking. Thank you very much, over to you.

MR FLETCHER: My name is Paul Fletcher. I'm director regulatory affairs and interconnect. What I'd propose is that I'll make a brief opening statement. My colleague David McCulloch will then make some slightly more detailed remarks and then we'll be available to answer your questions.

DR ROBERTSON: Thank you.

MR FLETCHER: So turning to just an initial statement, the availability and manner of the acquisition of spectrum is vital to Optus's business. We use spectrum to provide mobile communication services to 3.7 million Australians. Our mobile network reaches 94 per cent of the Australian population. The mobile operations of Optus constitute a very significant proportion of our operations. The mobile division in the last financial year generated $2.1 billion in revenue, just over 40 per cent of Optus's total revenue. Optus initially acquired spectrum in the 900-megahertz band as part of its winning bid to become the second carrier in Australia in 1992 and the company holds that spectrum under an apparatus licence.

We have subsequently participated in a number of auctions to acquire spectrum, for example the 1800 auction in 1998 and most recently the auction earlier this year for spectrum in the 2 gigahertz band for the provision of intended further provision of third-generation mobile services. We paid $249 million at that auction. We have also acquired spectrum to deliver other wireless services, for example in 2000 a subsidiary of Optus, Agility Networks, purchased spectrum in the

to the previous point that I have made. The ability in the act to convert from an apparatus licence to a spectrum licence is something that could potentially be utilised by the government, and at Optus's request, in relation to the current apparatus licences that we hold. We note the ACA's comments in its submission that the conversion process has not worked particularly adequately.

One of the difficulties is that the government has discretion at which price to offer the spectrum. In Optus's view, a better conversion process would constrain the price of conversion to the equivalent of the apparatus licence fees that the holder had paid over the life of the licences. That would serve to maintain access to spectrum at constant prices and facilitate certainty.

Finally the issue of secondary trading, which I'll comment on very briefly. A number of submissions to the commission have highlighted the fact that secondary trading is inhibited by stamp duty and capital gains tax costs. Optus would support removal of barriers to secondary trading in this respect. That concludes the formal presentation that we wanted to make to the commission, and of course I'm available to answer any questions.

DR ROBERTSON: Thank you very much. There's a lot of meat in that one, for us to get our teeth into. I'm surprised that you gave such little attention to secondary markets, secondary trading, because a lot of the argument, it seems to me, you're putting to us is that the market is better than the government in ensuring that you get the right price for the asset you're buying. I have no problem with that, I agree with it. But it seems to me that the thing that's missing is indeed the secondary market, because in order to have a real market price you need to be able to trade, apart from the time when you buy.

As far as we can see, the secondary market is still pretty thin. Would you care to comment on what you think should be done with the secondary market? That's the first point. The second one is, we'd like a little more clarification on capital gains tax and stamp duty and how it interferes.

MR FLETCHER: I think the reason that we have commented to only a fairly limited degree about secondary trading is that it hasn't really been something that we have seen very much of, and I guess its absence hasn't particularly to date been an impediment in Optus doing the things that we want to do. So for example the GSM spectrum, the 900-megahertz spectrum, as David has mentioned, was allocated to Optus as part of the initial licence, and subsequently we have acquired spectrum as necessary as it has been auctioned.

Certainly following for example the collapse of One.Tel there has been a fair bit of talk around the telecommunications industry, and more broadly, about how One.Tel's spectrum might be dealt with. We understand that a number of investment banks and others have been shopping proposals around the market. To date they don't seem to have crystallised into a commercial proposition which I suspect would

reflect ultimately the demand conditions in the mobile telephony market at the present time. I have not heard and we have not heard any suggestion that a constraint there has been in relation to the availability of secondary trading, except to the extent of the points that we have made about stamp duty and capital gains tax in the sense that they do obviously add cost and complexity.

There have been suggestions at various times that parties who have ended up with non-contiguous lots subsequent to auctions would like to trade with other parties to achieve more efficient outcomes. Those have been the circumstances to our knowledge which have been impeded by the stamp duty and capital gains tax considerations. Again from an Optus point of view, so far as I'm aware, we have not generally been in the position of the party that has been seeking to trade so it's not an impediment that we have struck directly. However, certainly we would like to see maximum flexibility there in the future, which is why we raise those impediments. But I think beyond that we're not really able to say to you, from our own experience of seeking to trade, we have struck impediments of this quantum. It's just that they have been raised certainly, to our knowledge, by others who have been interested in putting propositions to us as impediments to what they wanted to do.

MR McCULLOCH: I have nothing to add to that, doctor.

DR ROBERTSON: Nothing to add, okay. Could you take us through what you think these impediments might be? I mean, it seems to me that if you take One.Tel, for example, the value of what they bought has collapsed. I have heard figures like 10 per cent or 20 per cent of what they paid, in which case they're not going to pay any capital gains tax, are they?

MR FLETCHER: Look, I don't know, I haven't considered the question. We have simply made the point that in theoretical terms these are potential impediments to trading occurring and therefore we would prefer to see the impediments removed. But I can't give you any additional insight into the One.Tel situation.

MR McCULLOCH: And in general terms the spectrum will have more than a nominal value. It's a valuable asset and to that extent there will be significant capital gains impacts.

MR FLETCHER: I think perhaps one point that we could make is that when you acquire spectrum you're often taking a risk as to the success or otherwise of the business that you're going to carry out using that spectrum. It's very clear for example from the One.Tel experience that that risk is not always a wisely judged one.

Our experience with the GSM 900 apparatus licence fee causes us to believe that there's an element there of the government jumping on this asset and saying, "Aha, this has enormous value to you," but that value has been generated as a result of the success of the business that Optus has built up over time. I think that one

could identify that as a potential issue involving capital gains tax liability as well: namely that if the value of the spectrum increases because of an increase in the value of the underlying business or the business which uses the spectrum as an input by reason of the efforts and the successful management of the company that is using that spectrum, one might question whether it's appropriate for that to be clawed back in some way at a subsequent point.

DR ROBERTSON: That's not very different from buying a house and adding to the value though, is it?

MR FLETCHER: I think perhaps the risk involved in buying a house is somewhat different in kind of magnitude.

DR ROBERTSON: Yes, but if any capital of that property increases in value you are liable to capital gains tax, as you and I are on our houses if we have had them a few years.

MR FLETCHER: Well, unless we are owner occupiers.

DR ROBERTSON: Yes, if you have one as an investment. I mean I can see that this might be a problem, but what I'm really trying to get at is it works both ways.

MR FLETCHER: Yes.

DR ROBERTSON: On the One.Tel one, it wouldn't have been a capital gains tax, because the thing collapsed anyway, whereas sure, I understand why Optus and Vodafone and Telstra are all upset about that increase in licence fees and I think there is a perfectly straightforward reason for that, not that I am condoning it by any means. But what happened was there was a big bubble in speculation on spectrum and the government saw what it thought was an opportunity to acquire some rent that they saw you as gaining. Clearly, the situation has changed enormously in the last 18 months and one would hope this is just a one-off, the government has made a mistake. What I'm really getting at is what's the general picture, which is ignoring that event which is unfortunate and raises issues about whether in fact the government should own spectrum or whether it isn't a public asset that should not be used for tax purposes, but somehow allocated for maximum efficiency.

If we put that on one side there is the question of how much trading might be impeded by capital gains tax and stamp duties, given that - and I accept your case that on the whole what we want to do is price the assets in the marketplace and then allow the system to trade, you then need to have secondary trading, otherwise the price you pay at an auction may not be the market value. You may have paid too much or too little, depending on the circumstances in the market. So that's why I'm worrying about the capital gains tax and the stamp duty issue.

MR McCULLOCH: I think a significant aspect of the claims in relation to an

exemption of some sort for capital gains tax relate to the fact that the trading will often be for the purpose of ensuring that the spectrum is contiguous, which is somewhat different to acquiring the spectrum to provide a service upfront.

DR ROBERTSON: Yes, I think as far as I've been able to ascertain that is about the only kind of secondary trading there has really been, which is trying to get contiguous spectrum so that it is easier to use. In fact I would think that in the longer term we would hope to see other kinds of trading in the secondary market to establish that these prices are right. But I agree with you, that is probably all we have seen so far.

DR BYRON: Sort of in relation to that, a number of people have suggested to us in various discussions and submissions the argument for petrol licences, or in some cases these words like "freehold" rather than a lease period, the advantages of time limited tenure as opposed to unlimited tenure. Do you have any thoughts on that, particularly in regard to whether licences that were not time limited would encourage secondary markets, that if you had a perpetual right are we more likely to see those rights being freely traded than if they are time limited rights?

MR McCULLOCH: I guess that's possible, although I think our fundamental view would be that perpetual licences are not appropriate because they might potentially discourage the best and most efficient use of the spectrum and that there should be the ability for spectrum to be cleared and made available for more efficient uses, as long as there are appropriate mechanisms in place to secure an appropriate tenure in the first instance and for appropriate time limits to be put in place for spectrum to be vacated.

DR BYRON: But couldn't the new more efficient and more lucrative technology simply buy the rights to whoever has them at the moment? The question is whether or not the crown needs to be continuously involved in there in allocating these property rights, or whether as we do in the real estate market, you are freeholded and let the market sort it out. If somebody wants to buy four houses and knock them down and put up a high-rise apartment, it doesn't have to come back to the crown to reallocate those four bits and parcel it out as an apartment site. The market can take care of that if a more profitable option emerges.

MR FLETCHER: I think that one could conceive of a workable system that operated on that basis. There are some difficulties that would need to be overcome, one of them is that some holders of spectrum have tended to be government bodies, semi-government bodies - the Department of Defence holds a lot of spectrum - and they tend not to be motivated by managing their assets efficiently. That could be a concern if that was the only mechanism you were relying upon to ensure that spectrum was made available to the highest value user. I think a related point would be that one of the rationales for the present arrangement is that with technology changing rapidly, a finite tenure on licences is effectively a forcing device to revisit the question every 15, 20, 25 years as to whether particular spectrum is being used

for the highest value use or whether there are other uses that are better. We have seen that process going on over recent years as spectrum that had previously been used for fixed links has become used for mobile telephony where it is serving millions of people rather than small numbers of people.

DR BYRON: Again, the crown can have rights of compulsory resumption if there is a particularly good case for doing it, even though the property rights have been allocated indefinitely or in perpetuity or something like that. There are all sorts of other areas of property where we don't rely on short-term leasing, rather than simply allocating ones. I don't want to push that too far, but the corollary question that I was also thinking about in relation to this is in regard to the spectrum licence and secondary trading, I guess you haven't thought - I shouldn't guess anything. Have you considered if you have any surplus spectrum whether you might retail or subcontract, sublease, sublicence or whatever certain bits of it that you don't have a use for the next five years for example, to give an equivalent to an apparatus licence for some fixed link or something like that, given that it's completely compatible with your primary use and doesn't cause any interference. Is that something that Optus would consider if you had (a) some corner of your spectrum that was surplus and you saw somebody out there who might be willing to buy it from you or lease it from you for a few years within your spectrum licence?

MR FLETCHER: Those kinds of proposals are made from time to time and we are by no means opposed to them and we consider them on their merits. Generally where we acquire spectrum we have done so with a view to meeting a specific need. Also the experience of Optus in its relatively short life has been that the demand for services which we supply using spectrum has risen very sharply. In other words, our collective experience as a company is that you end up needing all the spectrum that you have got. Even if you are not using it this year you will need it next year. So to date we have not, so far as I'm aware, seen a case for those kinds of transactions, but we certainly wouldn't rule them out and it might well be interesting to come back in a year or two's time and ask that question of us and others in the telecom industry and see whether we are experiencing the same kind of demand.

DR BYRON: I guess one of the things that that leads me to think about is the idea of spectrum licences as being large chunks. I mean even larger chunks of spectrum than we had thought of in the past and the owner or manager of all that becomes - can I say this - the Westfield who has a large parcel and then, you know, uses some of it themselves and lines up all the other bits to retail or sublease or anything else and you are the master contractor with a big chunk of spectrum to manage and then you slot in individual boutique operators within your big piece of real estate. That takes me to the sort of New Zealand experiment with a large number of spectrum managers. Any comments on that?

MR FLETCHER: I think our approach to those kind of questions is driven primarily by a fear that changed arrangements or more innovative arrangements will ultimately have the result of driving up the price we pay for spectrum. As spectrum

is one of our major inputs, we are clearly anxious to ensure that the cost that we pay is as low as possible. We would be therefore wary essentially of I guess middle persons coming in to the market if that had the result of increasing our costs without a countervailing benefit or with a countervailing benefit that was captured by somebody else.

DR BYRON: I guess I was thinking about reforms that might have the effect of driving down the cost of spectrum, like releasing large amounts of spectrum that at the moment is held by organisations that may not value it as highly as you do.

MR FLETCHER: So the problem you are thinking about is if you have a lot of organisations each holding an inventory of spectrum that they are not presently using, but think they might have a use for in the future, that that on a market-wide basis is inefficient. It certainly seems like a plausible argument.

DR ROBERTSON: This seems to us to be possibly one alternative to the government playing such a large role. I mean obviously everybody would be frightened of Telstra because they own so much already, but to have several private operators owning spectrum and leasing it to other people would certainly establish a better market than just having bits put on the market when the government sees fit. I would see some advantage in that. Obviously you don't think so. You think that would be a risky venture from the commercial point of view.

MR FLETCHER: I guess I'm highlighting the concerns that we would have - I am not saying we couldn't be satisfied about those concerns. On the other hand one can clearly point to some disadvantages of the present regime which might be addressed by the kind of arrangements that you are thinking about. For example, the process of acquiring spectrum to support a new business venture is a lengthy one presently and often requires a sustained period of lobbying various arms of the bureaucracy as well as, at the political level, to achieve the outcome that you want. To give a concrete example of that, opportunity through its subsidiary Agility Networks acquired LMDS spectrum last year. The Australian Communications Authority had announced when it had previously auctioned LMDS spectrum, which I think had been about a year previously, that it did not then intend to auction the rest of that spectrum for another two to three years.

In the intervening time Optus decided that it wanted to pursue a business strategy of operating LMDS services to provide access services to business customers whom we couldn't adequately serve otherwise. We therefore determined that we wanted to acquire appropriate spectrum, which I think was 27-gigahertz spectrum. The problem that we faced was that the government had laid down this timetable. That seemed to us to be a curious result, that we wanted to use the spectrum. We had plans for it. There was, we believed, a value in customers of us being able to use that spectrum to deliver services. But the challenge for us was to effectively lobby to alter the timetable.

We ultimately succeeded in that but it took several months of work. An arrangement where there was, I guess, one or more players to whom you could go to, to acquire spectrum off the shelf might well have some appeal in that situation. I suppose another situation where it might have appeal is if you pursue the option of buying spectrum and then for whatever reason the business opportunity that you bought that spectrum with a view to pursue doesn't materialise. Presently the best option is to hold onto that spectrum because, given that spectrum comes onto the market infrequently and in sort of lumps, it's best to, I guess, maintain your inventory. If it was somewhat more flexibly allocated and if it was possible to, I guess, return it to somebody who would give you value for it, then there might well be some benefit in having that option open to you.

DR ROBERTSON: Yes, that would seem to me to be more likely, given the suggestion in the ACA submission that the licence issue not be time limited. Then presumably they'd be getting rid of the licence into other people's hands to create a much bigger market. But it's just a suggestion at the moment of course, but it does seem to help with your argument which, as I read it in your submission, is mostly about how markets are better at setting prices than governments are, and the way to do that is to make sure you've got an active market. At the moment it's really a pretty tiny market at any one point in time and without a secondary market there's not even any trading going on after people require the stuff. So you're never quite sure whether it is a market price or not.

MR FLETCHER: I think there's a particular problem at the stage of the cycle that we're at now. It's the issue you were alluding to before, that the government saw huge amounts being paid for spectrum only at the start of last year and there's therefore a perception that that sets the natural or proper level of pricing for spectrum. In fact, you know, the truth about markets obviously is that price levels can move quite dramatically and so if it's genuinely a market-based allocation system that ought to mean, as we've argued, that from a government point of view you accept the price the market sets even if it's quite low, because underlying demand conditions are very weak and that I think is a key element of our argument about the way that, in our view, the reserve price approach has been misused.

DR BYRON: On the subject of reserve prices and the presence or absence of reserve prices in the bidding process, I had a little bit of difficulty following the points that are made. I think it's paragraph 1.57 on page 16 of your submission, where the point that was made in your oral presentation about the large amount of the third-generation spectrum was because of the reserve prices. I guess I'm thinking of auctions where the auctioneer says, "It doesn't really matter what the starting price is. We're going to get to the same end price at the end of the day. Let's start at a dollar." But you seem to have quite explicitly tagged the 141 million as because of the reserve price.

MR FLETCHER: Yes.

DR BYRON: I don't quite see the relevance of the reserve in that context.

MR FLETCHER: Okay. I guess what we've argued is that if you break down the 3G auction into the various lots by geographical location and then also by which portion of the spectrum they fell into, you get a large number of lots - I forget the exact number now - and each one of those had a reserve price attached to them. Now, a significant proportion of those went - - -

DR BYRON: At reserve?

MR FLETCHER: Went for the reserve price.

DR BYRON: Okay, sorry, I've got you now. But I guess you can't make an estimate then of - I mean, presumably without the reserve price you wouldn't have got them for zero or $1. In the absence of the reserve you can't really say what the market bearing price for those lots might have been. But maybe we shouldn't assume that they would have been zero or one.

MR FLETCHER: No, I don't think we're saying that. I think what we are saying is that because such a high proportion of the lots went for the reserve price and no more, that indicates that the largest determinant of the ultimate price that's set is the reserve that's set, which suggests to us that the process is a poor second best when it comes to arriving at what the actual market bearing price is.

DR ROBERTSON: One of the things that would be a determinant of price, and presumably of price change, over time would in fact be changing technology. So the price that you pay in year 1 might be quite different from what you'd be prepared to pay in year 5, and that depends entirely on the market, it seems to me. Now, probably we haven't had a long enough period of time to see that, in the sense the auctions came, you know, as we were getting up towards the boom period and the bubble, and now the bubble has collapsed and we're back to some level we don't really know yet. But it seems to me one of the difficult things about pricing spectrum over time has got to be what has happened to technology and indeed there's a fair bit of spectrum that's unused as yet because the technology is not in place, as I understand it. Is that correct?

MR FLETCHER: There's certainly spectrum that has been reserved through ITU processes for technologies that are coming down the chute, as it were. In fact third-generation spectrum is a good example of that.

DR ROBERTSON: Yes.

MR FLETCHER: The process of getting spectrum allocated by the ITU - in fact it's not the ITU, it's the Rad Comm's equivalent of that - is, it appears, a key part of manufacturers being able to satisfy themselves that they've got a viable product. If they can't get a spectrum slot for it then telcos around the world aren't going to

believe that their national regulators will make a spectrum slot available, which means you're going to be reluctant to buy the product.

DR ROBERTSON: That also applies to radiocommunications we think as well as to telecoms.

MR FLETCHER: Yes.

DR ROBERTSON: Because we've come across problems on that with new equipment coming on line and quarrels between countries about which bits of spectrum they want to use for particular activities.

MR FLETCHER: I mean, another interesting example of the way that the value of spectrum changes over time I think is probably digital television. Now, we have the peculiarity in this country of course that broadcasting spectrum is not allocated on a market basis. But nevertheless I think looking at the technological changes there is quite instructive because, you know, the analog spectrum that's used for broadcasting, you have a seven-megahertz band and then you have to leave a

DR ROBERTSON: The question probably sounded naive, and it was, but it's just something that hasn't come up in anything we've talked about as yet, I don't think. But on that, you're working with ACA and there are no problems as far as that goes, right. Neil, do you have any further questions?

DR BYRON: I'll probably think of some afterwards.

DR ROBERTSON: Yes, me too.

DR BYRON: Sorry, I don't want to keep harping on this, but the 900-megahertz price increase - is that the only example that you've had since 92 of that sort of shock? I mean, can we take this as being a once-only aberration or has the same sort of thing happened in other cases but with much less spectacular impact?

MR FLETCHER: I don't know the answer to that question off the top of my head. I'm tempted to say there have been no other examples but I'd prefer to go away and just review the files before coming back to you, but we can certainly come back to you on that point.

I mean, there have been other recent examples of apparatus licences being converted to spectrum licences, not involving Optus but we're aware - I think it was a 500-megahertz spectrum. Certainly there was spectrum last year or the year before that was converted - spectrum held by TARBS I think and possibly Austar as well - and that got a little bit of press coverage at the time. I'm not sure though of the commercial basis or the price basis on which the conversion occurred.

DR ROBERTSON: If the apparatus licence were converted to a spectrum licence over 10 years, how do you think the government might increase the licence each year, or do you think they would just choose a number and say, "This is it for 10 years"?

MR FLETCHER: Our suspicion is that they would - or our expectation, perhaps I should say - is that they would set an up-front price that would be - I would imagine you could calculate it on a number of bases. One would be by reference to prices realised in recent spectrum auctions, although we would argue for obvious reasons that you need to do that with some caution. Another would be - and I think we've talked about this in our submission - you take the stream of payments and calculate an equivalent of that. But we would be surprised if there was a proposition that it would be paid on a year-by-year basis. The approach that the ACA has taken, and the government more generally, typically seems to have been that certainty of tenure for X number of years means that you pay up-front.

There's no logical reason why that should be the case of course, and you could combine different elements. You could have a 10-year licence but with a fee paid on an annual basis that was referrable to the revenue generated using the licence, as is the case with the broadcasting licences. We argued at various points last year that

the government should think about that in the context of 3G licences. They didn't find those submissions attractive.

DR BYRON: I was just going to make that point, because a few people have suggested to us that the requirement to pay a very large up-front price for the spectrum may actually reduce the pace of the actual roll-out of the service, and hence the cash flow and the delivery of the service to the ultimate customers and so on. I guess what they were getting at was some sort of deferral of the payment for the spectrum until the point in time when it's actually being used and generating revenue, or some percentage of it up-front that then is staggered or whatever over the life of the spectrum licence, simply so that the huge up-front capital cost doesn't actually retard the ability to put the rest of the infrastructure in place.

MR FLETCHER: Yes. One can see some virtue in those kinds of arguments, particularly if you look at the experience of the European 3G auctions which appear to have had the effect of so loading down the telcos that acquired spectrum that their financial capability has been actually significantly weakened. It's hard to see how that's a good outcome in public policy terms if you want to see a roll-out of new services rapidly.

I guess the consideration that needs to be balanced there is that if you link payment to commencement of services or to revenue generated using certain services, you're then effectively saying this spectrum is going to be used to provide this particular service, which again is perhaps a little bit of a departure in direction from the notion that has been reflected in the act to date - that spectrum licences are for the use of the spectrum and you don't have to designate what kind of service you're going to provide over that spectrum.

DR BYRON: But it also has very different consequences for the distribution of risk between the crown and the company.

MR FLETCHER: Definitely.

DR BYRON: In terms of the realisation of the growth potential.

DR ROBERTSON: I think I've run out of questions for the time being. Would either of you like to say anything before we close - something you've suddenly remembered or something you wish to withdraw? All right, thank you very much. It has been very informative. Thank you for your time.

AT 3.12 PM THE INQUIRY WAS ADJOURNED UNTIL
WEDNESDAY, 24 OCTOBER 2001

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