

SUBMISSION NO 7

Inquiry into Wireless Broadband Technologies

In response to the Inquiry into Wireless Broadband Technologies currently being done by the Standing Committee on Communications, Information Technology and the Arts, my submission follows. Please note that any opinions are my own and not that of any organisations that I am involved with (e.g. Linux Users of Victoria).

The Problem

In 1998 I looked into getting broadband Internet access. Telstra was the only carrier for broadband back then and they were too expensive because of their metered download charges (something mostly unique to Australia). So we put up with dialup for two more years and during this time Telstra decided to start charging for local traffic on their network.

The year 2000 saw something that many thought would take the Australian Internet Industry by storm. Optus@Home, a joint project between C&W Optus and Excite@Home was announced. This service was an Internet service provided by Excite@Home Australia and the 'last mile' connection by physical coax cable and optical fibre was to be provided by Optus. The service was very competitively priced and the only unlimited broadband product available on the market. Telstra responded by releasing a service that was 12 times slower. Telstra wasn't even trying to compete. From this point on it was obvious that the future of broadband in Australia was undoubtful. Optus@Home was not available to us because we lived in a townhouse.

In late 2000 we got a \$115 unlimited ADSL service from iPrimus. That was almost twice the price as the same service from Optus and four times slower or three times faster than Telstra's unlimited ADSL plan. It was very costly for something that we basically wanted to use for browsing the web, email and the occasional download. The service was supplied over Telstra's infrastructure and this to lead it's high unreliability. In August 2001 my father who was paying for this service sadly passed away (coincidentally he was a Telecommunications Industry Analyst). During this time Optus had imposed a download limit that was ten times the average user download. This sounded like shocking news to start with, but in actual fact this system was very fair. Telstra responded

again by releasing a 3 gigabyte download limit, approximately six times less than what Optus would allow.

After moving houses I got the Optus@Home service. I was very impressed with the service. Like with my ADSL, it appeared to be setup to allocate a static IP address. This was very handy for accessing files on my computers when I was away from home. This was one of the first things to change when Singtel bought Optus (Not to mention that Optus@Home always had a 'no server' policy). At around the same time Excite@Home was having financial problems so Optus bought the Australian division. However this was only to be the beginning. Today Optus announced their new pricing plans. Almost identical to Telstra, the only difference being that if you go over the download limit on Optus you get the speed capped to less than that of dialup, where as with Telstra you pay for each megabyte here after.

What Broadband Is (or needs to be)

It is evident from the Optus 'no server' policy that the corporate world sees the Australian consumer as a peasant who will consume the content and will not be permitted to have the freedom to serve their own content in any way that they should desire. So I would like to see an end put to this misconception that the telcos and ISPs have. Broadband is not just about browsing the web and reading email it's about sharing and having the freedom to do things that we haven't been able to do before. If I want to host my own website from my home with the server side scripting language of my choice, I should be allowed to. Likewise if I want to be able to change the settings on my heating system or air conditioner before I go home or do anything that home automation could provide over the Internet. Broadband also should not be limited by download limits or speed caps and it needs to be reliable.

The Solution

While it would be ideal to break up Telstra into a government owned wholesale division and a privately owned retail division, it has to be acknowledged that Wireless Broadband holds the key to the problem where Telstra owns all the copper that is needed for DSL and also to the problem of supplying broadband in rural areas.

However, wireless has it's fullest potential where there is a higher

density while using a limited mesh topology. This is where the 'last mile' is provided as a community initiative and where each participating household has Line of Sight and wireless links established to at least three other households participating that are no more than 20-30km away. It should be noted that while I say higher density, this does include many rural areas. It only takes one other link to another user to obtain a link to one of these networks. Obviously it is also better to daisy chain links with only two links at each household in a row than nothing at all.

This concept which I will now refer to as 'Community Wireless Networking' would be highly reliable because if one link goes down there will always be alternative links. Redundancy is very important with wireless networking as it only takes a tree to grow to render a link useless. This is particularly true when using the 2.4Ghz band as there is no guarantee that there will be no interference. The mesh topology also has the benefit that there are so many links that bandwidth will never be quite a problem.

At this stage, the law that specifies the use of the 2.4Ghz band for networking computers remains to be unclear. This law needs to be made more clear and it needs to take into consideration the Community Wireless Networking groups such as Melbourne Digital and Wireless (<http://www.wireless.org.au/>). The most common interpretation of the current law is that it allows community groups like this to use the 2.4Ghz band for not-for-profit local traffic. While it may not specifically prohibit the use of this band for Internet traffic without a carrier license, it would seem that you can't provide such a service on a profit making basis without a carrier license. There also needs to be consideration for allowing these groups to use technologies other than the 11Mbps 802.11b or ~50Mbps 802.11g. For example 802.11a is superior to these technology and to my understanding requires a carrier license for use.

Creating networks that are described above could not be done by commercial based entities alone. Likewise commercial entities need to be able to use these community wireless network meshes as the 'last mile' for providing Internet access. Any carrier licenses that commercial entities must obtain must be priced so that it would cost them no more than providing similar services over DSL or dialup. It should also be possible to start selling such services with a low capital margin. For example an individual or a small business with a DSL link should be able to resell access to their connection to their surrounding

neighbours. This should apply whether or not 'last mile' is through a community mesh or through a direct line of sight link from the ISP to their customer.

These groups could obviously also do with government assistance, both at the state and federal level. For example joining these networks in different parts of the country by optical fibre would vastly improve how useful they are, especially the community wireless networks in rural areas the number of users and the infrastructure is scarce. It would also be helpful to provide access to government facilities for use as wireless access points/repeaters and possibly providing the hardware for these access points and hardware. However most of these community networks have the capability to work without any such funding, providing the law allows for it.

Thank you for your time and consideration for any of the above issues.

Yours Sincerely,

Jeremy Lunn