

WBT Inquiry
Submission No.16.....

**Optus Submission to House of
Representatives Inquiry into Wireless
Broadband Technologies**

May 2002

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1. Introduction

- 1.1 Optus provides this submission to the House of Representatives Inquiry into the current and potential use of wireless technologies to provide broadband communications services in Australia, including regional Australia.
- 1.2 Optus currently provides wireless services using GSM, satellite and wireless local loop (using the 802.11 standard). GSM is used for mobile services. For Optus, satellite is generally the technology of choice for delivering broadband data services in remote and isolated areas.
- 1.3 The key points made by Optus in this submission are that the:
- (a) delivery of more sophisticated broadband services in remote and isolated areas need incentives for providers to invest in alternative networks and technologies to give people in these areas choice and superior services. New technologies require economies of scale to compete against the incumbent on a competitive basis so these new broadband services are affordable: and
 - (b) Government's high spectrum auction reserve pricing arrangements is a disincentive to infrastructure investment and dampens the wide take-up of new services.
- 1.4 This submission provides Optus comments by working through the Committee's Terms of Reference.

2. Current rollout

- 2.1 The Inquiry TOR ask about:
- “the current rollout of wireless broadband technologies in Australia and overseas including wireless LAN (using 802.11 standard), 3G (eg UMTS, W-CDMA), bluetooth, LMDS, MMDS, wireless local loop (WLL) and satellite”.
- 2.2 Optus has only had some involvement in LMDS, and is currently rolling out a combined satellite wireless broadband solution for small communities as well as offering both one and two way satellite to individual sites and users.

LMDS

- 2.3 The ACCC have recently noted that:
- “...in Australia, LMDS has been touted as an alternative for solving new entrants difficulties in delivering services over the ‘last mile’. AAPT has bought almost the entire spectrum reserved for LMDS, which has an effective range of 5km. However, network rollout is still nascent. Overseas experience suggests that line-of-sight problems and sensitivities toward the proliferation of base station towers need to be addressed before LMDS is viable alternative to the fixed line platforms. Most business plans call for the service to be used as a wholesale or corporate offering rather than as a mass retail product. Consequently, the BIS Shrapnel report considers that LMDS is only a realistic

alternative in those areas where fixed broadband offerings are unavailable or very expensive.”¹

- 2.4 Optus experience is that LMDS technology is still not cost effective and there is not a market at present for broadband services using this technology.

Satellite

- 2.5 Optus is currently offering two satellite technologies that enable broadband access — SatWeb and SatData Star IP.

SatWeb

- 2.6 SatWeb offers the option of either one or two-way high-speed access to the Internet/Intranet, offering faster data speeds than ISDN and is an ideal solution for rural and remote communities. The one-way service relies on a terrestrial request path (using PSTN, ISDN or Frame Relay etc) and the two-way service removes the reliance on the terrestrial network. These services are ideal for users that cannot access cable, ISDN and need access to high-speed data.
- 2.7 This service is available extensively throughout Australia, wherever Optus satellite has footprint. Customer sites can be activated quickly through the installation of the VSAT (very small aperture terminal) that provides a small ground earth station.
- 2.8 Available data speeds are up to 200 kbps and up to 400 kbps in the one or two-way option, offering maximum flexibility and choice. Faster data speeds will be available. Circuit speeds can be asymmetric, offering different request and return speeds, reflecting user needs.
- 2.9 The applications available on SatWeb include:
- (a) Internet Access;
 - (b) Rapid File Distribution (an efficient way to distribute information to sites);
 - (c) Web Cast (a quick and efficient way for users to access relevant sites);
 - (d) Video streaming (video clips over the web); and
 - (e) Interactive Distance Learning.

SatData

- 2.10 SatData delivers two-way point-to-point connectivity over satellite links offering reliability usually associated with dedicated ‘data pipes’. The organisation can choose the pool of bandwidth necessary for its sites instead of being charged a fixed cost for bandwidth regardless of usage.
- 2.11 SatData also offers the additional services option of SatData Star IP that is an affordable solution for organisations that need to connect a large number of remote sites to a central office. This two-way wide access network (WAN)

¹ Australian Competition and Consumer Commission, Line Sharing Service, Draft Decision on whether or not a line sharing service should be declared under Part XIC of the *Trade Practices Act, 1974*, page 40.

that makes economical use of the bandwidth as the amount of bandwidth required is dependent on the number of sites connected and the applications used. This solution is ideal for ATM and EFTPOS transactions and client-server transactions.

- 2.12 SatData Star IP uses wireless to reticulate the service to the remote sites. 802.11 is the standard used for the service, utilising shared wireless spectrum.
- 2.13 The high-speed data rates of 8Kbps to 36Mbps ensure fast delivery of anything from multi-media presentations to email and transactions based programs. Services available on SatData include:
 - (a) High quality videoconferencing;
 - (b) Interactive Distance Learning;
 - (c) High speed Internet access;
 - (d) Private and Secure IP enterprise data networking;
 - (e) Video streaming;
 - (f) E-Commerce;
 - (g) Data Casting (a way to broadcast data information).
- 2.14 Using SatData Star IP, the community can enjoy the benefits of a range of broadband services (using the wireless access):
 - (a) Broadband Internet to the home;
 - (b) Videoconferencing;
 - (c) E-Café/Internet café services
 - (d) More effective e-enablement of a local electronic delivery shop eg – Internet banking, EFTPOS, government point of sale, large data file transfer services such as video on demand downloading.

3G

- 2.15 Optus has paid \$250m for 3G spectrum to extend the investment in the GSM network by offering services and technology that complements Optus other data offerings such as GPRS.
- 2.16 3G enables much higher bandwidth mobile services. 3G will be backward compatible with Optus existing data mobile services. However, fully commercial 3G services are still some time away.
- 2.17 The high cost of the 3G spectrum increases the costs consumers will have to pay to use the 3G technology. For many users these services will be out of reach for sometime. In the long-term after these hurdles have been overcome, there is the potential for 3G to be widely available for delivering voice and data services.

3. The inter-relationship between the various broadband technologies

3.1 The Inquiry have asked about:

“The inter-relationship between the various types of wireless broadband technologies;”

3.2 LMDS, MMDS, and the wireless local loop are access technologies providing alternatives to copper access (‘last mile’) to the PSTN. Mobiles and satellite technologies offer networks that deliver services into the PSTN.

3.3 Mobiles provides the advantage of mobility that is becoming increasingly important. Satellite services are generally easy to deploy in remote locations, avoiding the difficulties of linking into a total terrestrial network. As explained above, Optus has been able to combine satellite and wireless access technologies to offer more affordable, competitive broadband services to more remote users.

4. Benefits and limitations on the use of wireless broadband technologies

Benefits

4.1 Wireless broadband access technologies are easier to rollout compared with rolling out terrestrial landlines where extending the cable is not possible because it is unavailable, unreliable or too expensive or difficult.

4.2 Mobile wireless technologies offer the additional functionality of access to telecommunications services while on the move.

Limitations

4.3 Wireless shared spectrum services are likely to serve a narrow niche market, offering lower quality services than 3G services.

4.4 Technologies reliant on shared spectrum do not incur spectrum charges, so utilise publicly available spectrum. A disadvantage of using shared spectrum is that wireless access providers cannot manage the use of the shared spectrum (using eg 802.11). When use of shared spectrum is saturated, it slows down so applications reliant on high-speed functionality become limited in their use.

4.5 Wireless broadband technologies that want to offer reliable high-speed functionality need to be able to manage use of the spectrum, so need spectrum with exclusive access rights. The Government currently charges high licence fees for access to this spectrum (eg 3G).

4.6 Wide availability of 3G services sooner rather than later will only be possible if those licence fees are at reasonable levels. High reserve prices driven by revenue requirements do not assist the wide availability of 3G services in the short-term.

5. Wireless broadband technologies to provide 'last mile' access in rural and remote areas

- 5.1 Wireless broadband access technologies need to be able to link into a broadband backbone. In rural and remote areas access to fibre cable is quite expensive and generally not cost effective to rural and isolated communities
- 5.2 Using satellite to provide the broadband pipe into a community such as Optus SatData services is a much more cost effective and timely way of delivering broadband to communities and remote organisations. Using broadband wireless local loops to link into this pipe extends the reach of broadband services beyond the satellite VSAT site and extends the benefits of the technology so the wider community benefit.

6. The effect of telecommunications regulation on the development of wireless broadband technologies

Spectrum regulation

- 6.1 Spectrum regulation needs to promote sustainable competition through facilities-based competition. The most effective means for doing this is by selling and licensing spectrum in a way that is attractive to providers other than the incumbent. Again any reserve prices need to be set at levels that encourage bidding and not at high levels that excludes bidders and makes provision of the technology expensive.

Telecommunications regulation

- 6.2 Strategies that promote competition using alternative more effective technologies is far preferable than relying on telecommunications competition regulation to facilitate access to bottleneck facilities. These new technologies require large capital investment to generate sufficient scale economies to effectively compete against the incumbent.
- 6.3 The provision of services in rural and remote areas is less economic than those in more densely populated areas. Incentives are necessary to encourage new provider investment through:
 - (a) Government funding:
 - (b) Initiatives that encourage Government agencies to become 'anchor' tenants so the infrastructure has a reasonable and secure source of revenue.
- 6.4 Telecommunications regulation is relied on as a fallback to free up access to bottleneck facilities and to address the anti-competitive behaviour of the incumbent. Recent decisions by the Government to refine current telecommunications-specific arrangements in the Trade Practices Act 1974 will enable these mechanisms to operate more effectively.

7. Any changes to the telecommunications regulatory regime so Australia extracts maximum economic and social benefits from the use of wireless technologies

- 7.1 A change to the telecommunications regulatory regime necessary to improve benefits for Australians is the removal of unnecessarily high reserve prices in spectrum auctions. High spectrum reserve prices are a barrier to the wide adoption of 3G services.

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Murc Mahon
19/6/02