TELSTRA CORPORATION LIMITED

Submission to the Senate Environment, Communications, Information Technology and the Arts Committee

Inquiry into Competition in Broadband Services

30 September 2003

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Executive summary

Telstra is excited by the opportunities provided by broadband technologies. The effective use of high-speed Internet services by Australian businesses and consumers is an important social and economic goal, and part of Telstra's own growth strategy.

Public debate about access to broadband services is important. However, any development of broadband policy must be based on the facts surrounding Australia's short broadband history, and consider the regulatory and economic factors which influence demand for broadband in Australia.

Extremely high availability

Australian consumers have better access to broadband technologies than almost any other consumers in the world. Australia is ranked second only to South Korea in the availability of broadband services. Telstra's rapid broadband rollout has been, and continues to be, one of the nation's biggest and most costly engineering projects.

Some commentary suggests that the inability of some consumers to access broadband Internet via Asymmetric Digital Subscriber Line (ADSL) technology indicates there is a subsequent problem with broadband availability in Australia. However, technical and geographic constraints that prevent some consumers from accessing ADSL do not mean that those consumers cannot access broadband at all. Australians can also access broadband using hybrid fibre coaxial cable (Telstra's network passes 2.5 million homes) and satellite (available nationally). In addition, ISDN provides a faster than dial-up Internet option for 96 per cent of Australian consumers.

Telstra continues to invest in extending ADSL rollout and developing the technologies available to deliver broadband Internet to Australian consumers to continue to provide the greatest number of options for Australian consumers wishing to access high-speed Internet services.

Take-up consistent with international experience

A number of studies have compared Australian broadband take-up rates with penetration levels in other countries, and drawn conclusions about Australia's relative performance.

However, international rankings rarely take into account the length of time that broadband has been available in each country, even though this factor is critical to a realistic comparison of Australia's broadband performance. For instance, Australia's level of ADSL penetration in year three of its rollout (2003) exceeds the level of take-up in the third year of rollouts in France, Canada and the United States. When viewed in an appropriate context, international comparisons such as the OECD's broadband league table suggest that Australia is exactly where it should be at this stage of its broadband history.

Regulatory factors influencing broadband rollout also have an effect on penetration levels, including the delays imposed by regulation on the rollout of ADSL and the constraints imposed on the rollout of cable networks. Statistical modelling suggests that when the length of time that technology has been deployed and other regulatory factors are taken into account, Australia's broadband penetration rate is consistent with

OECD averages. Further, the rate of broadband growth in Australia continues to outpace growth rates internationally.

When viewed in an appropriate context, international comparisons suggest that Australia's broadband progress is consistent with other countries in the early stage of technology adoption, and will continue to increase as we move beyond the early adopter phase. Telstra submits that there is no reason to suggest that Australian penetration levels will not continue to grow at a rapid rate.

Prices are competitive and fair

Prices for broadband access in Australia are consistent with or lower than prices in our major trading partners. The cost of entry-level ADSL is cheaper in Australia than in the United Kingdom, the United States or France[1]. Likewise, the cost of Telstra's ADSL and cable access products is cheaper than domestic competitors including AOL/7, TPG, OzEmail and iPrimus[2]. The comparison is even more favourable for Telstra when regular discounting of up to $120 is taken into account.

Like an increasing number of international providers, Telstra imposes a charge for additional data usage. These fees apply for the same reason they do in the case of mobile phone contracts: customers who impose the greatest demands on the network also pay the greatest prices. Otherwise the average price would increase as small users cross-subsidise heavy users, and take-up rates would suffer.

Telstra acknowledges that for a small percentage of its total customer base reliant on 2-Way satellite for their broadband needs, the costs of supply and therefore the price of service are comparatively high. Telstra is actively exploring options to reduce costs and prices for satellite broadband access.

Broadband growth assured

The fundamentals are now in place for rapid growth in the Australian broadband market. Telstra has invested heavily in rolling out one of the world's biggest broadband networks; in content strategies such as the Telstra Broadband Fund; and in building strategic partnerships with Governments of all levels in order to increase demand for broadband Internet. Prices are now at levels comparable to, or cheaper than, domestic rivals and overseas providers. Competition is more intense than in probably any other sector of the telecommunications market, with over 200 providers of ADSL alone. All of these factors are indicators of a vibrant broadband sector where there is no identifiable lack of competition or market failure.

Broadband penetration rates in Australia will continue to climb as we move from an 'early-adopter' phase using infant technology into a more mature mass consumer and business market. Continued aggressive marketing, the development of compelling content and applications, demand aggregation by Governments and the relaxation of regulatory impediments will all help the Australian broadband market become mature, efficient and very productive.

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[1] When adjusted for exchange rate differences and purchasing power parity: AT Kearney, May 2003. Recent ITU assertions to the contrary are simply wrong. For example, the ITU based its pricing comparison on US$91.77 per month for the lowest broadband price offering in Australia (or approximately AUD$170 per month). Telstra's entry-level broadband pricing starts at $59.95 per month once connected.

[2] As at 16 July 2003 for 256/64 kbps, minimum 500Mb monthly usage allowance or entry level allowance, 12 month contract, 1 port modem, including all nominal fees (professional installation, contract and connection fees) and excluding any short-term special discounts.

1. Introduction

Telstra welcomes this opportunity to contribute to this important inquiry into broadband services in Australia. Telstra is committed to stimulating the take-up of broadband services and applications in Australia, and views broadband as a key growth engine for the company.

Telstra shares the vision of the National Broadband Advisory Group (BAG) that:

> *Australia will be a world leader in the availability and the effective use of broadband, to deliver enhanced outcomes in health, education, commerce and government and to capture the economic and social benefits of broadband connectivity*[3].

Telstra's own vision for the company's online future is built around a platform designed to enable customers to access content on "any device, anywhere, any time". This underpins Telstra's commitment to driving broadband take-up through removing barriers to entry, providing robust, stable systems, and developing and hosting compelling online customer applications.

Telstra's network currently enables all Australians to access one or more types of broadband services. However, although providing more consumers with a choice of delivery platforms for high-speed Internet is an important long-term goal, the rollout of new broadband technologies by carriers must occur on a commercial basis. Any decision to rollout new networks must be made in accordance with demonstrated consumer demand, allowing carriers to recoup the significant costs of infrastructure deployment.

If Australia is to achieve the BAG's vision of becoming a "world leader in the availability and the effective use of broadband…" any policy development in this area must consider the facts surrounding the strong growth rates for broadband services in Australia's relatively short broadband history. There are many myths and sources of misinformation influencing public debate about broadband in Australia. This inquiry is an important opportunity to address the real issues surrounding broadband take-up in Australia and to develop evidence-based strategies for encouraging Australia's development as a world leader in the effective use of broadband technologies.

In this submission Telstra will address a number of issues commonly raised in discussions about broadband in Australia, including broadband take-up and availability, the price of broadband services, and the level of competition in the supply of broadband services in Australian markets. In addition, Telstra will detail its commitment to broadband, and suggest some strategies that in Telstra's view may assist in increasing broadband take-up rates in all sectors of the community.

[3] *Australia's Broadband Connectivity*, The Broadband Advisory Group's Report to Government (BAG Report), Commonwealth of Australia 2003, p1.

2. What is broadband?

Telstra submits that in considering the inquiry's Terms of Reference, the Committee should adopt a functional definition of broadband services. The BAG Report *Australia's Broadband Connectivity* (BAG Report) defines 'broadband' as:

> *...the ability of a single access line or wireless or satellite link, connected to a telecommunications network, to provide support for fast, always-on access to digital content, applications and a range of services, some or all of which can occur simultaneously*[4].

Telstra supports this definition, which is stated to deliberately focus on the functionality of a service rather than its speed. In Telstra's view, the term 'broadband' should be used as a generic term to describe a range of technologies and services that provide consumers with 'always-on' high-speed data connections.

A common perception fuelled by a number of media statements seems to suggest that Australian consumers cannot access broadband unless they can access higher-speed Internet via Asymmetrical Digital Subscriber Line (ADSL) technology. However, an inability to access ADSL does not mean an inability to access broadband. Telstra's main broadband products, available to both retail and wholesale customers, are:

- ADSL –a technology for transmitting digital information at a high bandwidth over existing copper telephone lines. ADSL is asymmetric in that it uses most of the channel to transmit downstream to the user;
- Hybrid fibre/coaxial (HFC) cable – high-speed Internet access delivered via a cable modem;
- 1-Way satellite – allows customers to download from the Internet at high speeds via satellite using their standard telephone service as the 'uplink';
- 2-Way satellite – a service providing both uplink and downlink via satellite, avoiding the requirement for dial-up connection via a phone line; and
- BigPond Regional Connect – a product that bundles 1-Way satellite, BigPond dial-up and Integrated Services Digital Network (ISDN) services to provide an attractive broadband alternative in areas where ADSL is not available.

ISDN is an attractive alternative to broadband, which provides a significantly enhanced quality of service to traditional dial-up Internet access. Telstra's new untimed data call ISDN product, available to 96 per cent of all Australians, offers a faster than dial-up Internet option for those customers who do not want satellite or cannot access cable or ADSL[5]. ISDN also helps to overcome access problems caused by distance from the local exchange, with an ISDN extender facilitating access up to 18 kilometres from an exchange[6]. Untimed dial-up charges provide an effective pricing equivalent to broadband. ISDN's upload speeds of up to 128 kilobits per second may also provide a superior alternative to some basic broadband packages for customers involved in transferring larger amounts of data.

[4] BAG Report, p6.
[5] This product can be used with Telstra BigPond or another ISP.
[6] Depending on the cable gauge used.

3. Broadband availability in Australia

There is an important distinction between the number of Australians who can access broadband services, and the number of Australians who choose to avail themselves of these services. This distinction is critical to developing informed public policy solutions to encourage take-up of broadband services in Australia.

3.1 The ability of Australian consumers to access broadband

Australia is a world leader in terms of the reach of broadband services. Recent McKinsey data show that broadband is more widely available in Australia than in most countries, including the United States, Canada and the United Kingdom. These figures include broadband availability in rural and regional Australia. In fact, Australia is ranked equal second in the world in terms of the availability of broadband to consumers[7].

Australia's ranking in terms of the reach of broadband services (ie, broadband availability) is an even greater achievement due to the geographic spread of its population, and our limited population densities in some areas.

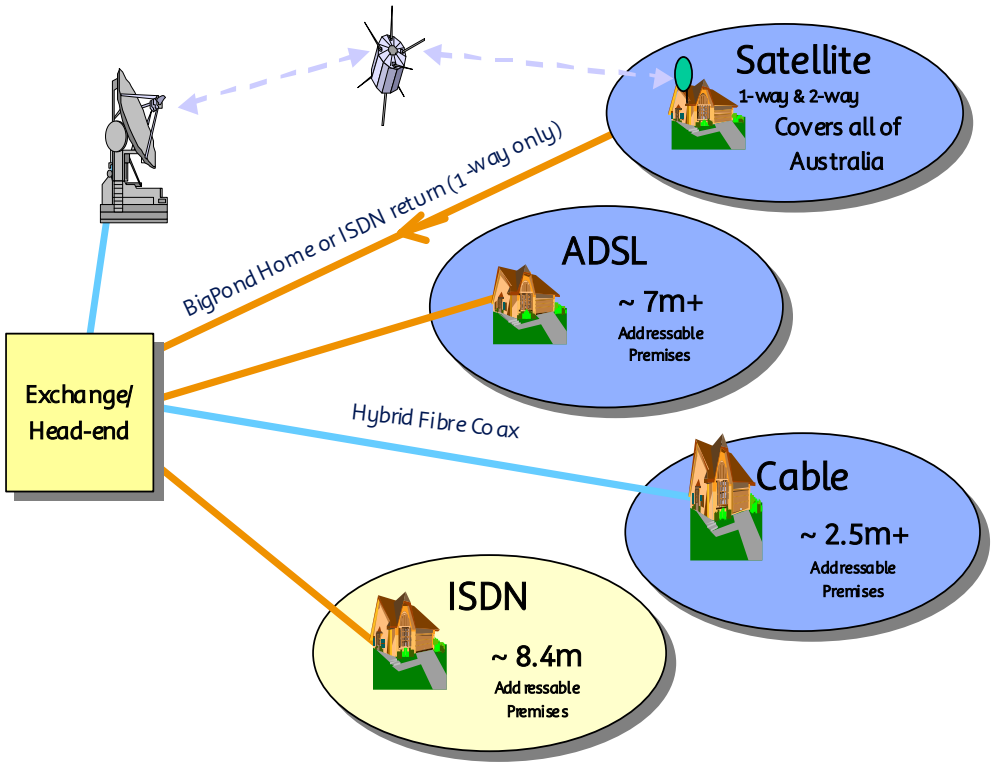
Telstra BigPond is the only ISP that has made a commitment to make broadband available to all Australians using cable, satellite and ADSL technologies. The true picture of broadband availability in Australia is:

- ADSL is available to over seven million premises, which is equivalent to around 75 per cent of the Australian population;
- Telstra HFC cable extends past 2.5 million premises (equivalent to 36 per cent of all Australian premises); and
- satellite broadband is available to virtually all customers irrespective of their location.

A significant number of people can also access broadband services over the cable and xDSL networks of Telstra's competitors, significantly increasing the reach of cable broadband beyond Telstra's own network. Telstra is also investing in the development of wireless broadband alternatives, and has introduced a number of WiFi hotspots to increase the Internet options available to consumers. In addition, 96 per cent of Australians can access faster than dial-up Internet services via ISDN.

[7] *Making Sense of* Broadband, McKinsey Quarterly 2003 #2

Figure 3.1 Broadband Availability in Australia



Every Australian household has access to one of more forms of broadband technology, making broadband availability in Australia better than virtually every other country in the world. If there is a perceived problem with broadband take-up in Australia, it cannot reasonably be explained by poor access to broadband services.

3.2 Network capability issues

Although all Australians can access broadband via one or more delivery platforms, due to technical and distance limitations, not all consumers are currently able to access ADSL. The bulk of Australia's existing copper telephone network (and the networks in all other countries) was developed prior to the invention of the Internet, and was never designed to carry ADSL. As a result, there are some areas of Australia's phone network where broadband Internet on an ADSL platform is not currently available.

There are approximately 10.3 million telephone access services provided by Telstra in Australia. Approximately 75 per cent of these services are capable of delivering ADSL. This compares favourably to countries such as the United States and United Kingdom, where ADSL coverage is limited to approximately 65 per cent of access lines provided by incumbent carriers.

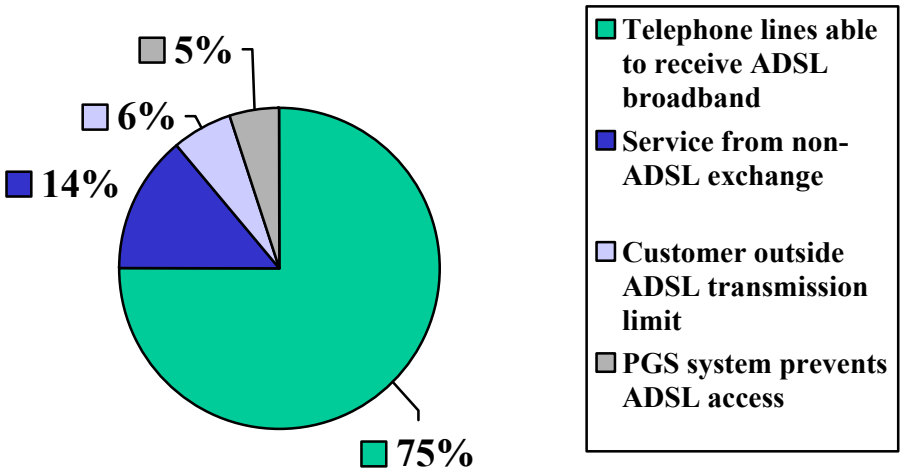
There are three main reasons why some customers may not be able to access broadband via ADSL:

- the serving Telstra exchange may not be ASDL-enabled;

- the customer's premises may be beyond the technical limits for ADSL transmission[8]; or

- the telephone service may not be provided via a straight copper line but via some kind of electronic access line technology, commonly referred to as a pair gain system (PGS)[9].

Figure 3.2 ADSL availability in Australia
Percentage of telephone access lines



Non-enabled exchanges

The proportion of Telstra's telephone access lines currently provided from exchanges without ADSL capability is currently around 14 per cent. Telstra is investing more than $1 billion in rolling out its ADSL network and carrying the risk that comes with such a massive investment. By October 2003 Telstra will have enabled just over 1000 of its approximately 5000 exchanges to be able to deliver ADSL services.

Telstra will continue to invest in enabling exchanges in a commercially appropriate manner. However, any upgrade of existing infrastructure must occur in a way that will allow firms investing in infrastructure to do so in circumstances where there is a reasonable basis for recouping the costs of such a significant investment. In other words, investment in broadband technologies must be led by demand for broadband

[8] ADSL requires both voice and data services to be carried over the same copper wires. Devices such as 'splitters' and 'filters' are used to separate the voice and data frequencies. If not managed appropriately, these devices can cause loss of quality to the voice service being carried over the wire. In order to maintain acceptable voice call quality, current technical limitations mean that ADSL cannot be provided more than approximately 3.5 kilometres from an exchange (to ensure electrical attenuation does not exceed the current Australian standard of 49 decibels). Note that new International Telecommunications Union standards ADSL 2 and ADSL 2+ are expected to improve the reach of ADSL technology in future years.

[9] Note: there may be some other infrequently occurring situations, which will impair ADSL delivery, such as where another product is associated with a telephone service, older style line conditioning equipment is installed on the cable path or there is potential for interference with other services. These factors potentially impact only a small percentage of telephone service lines.

services. Telstra submits that it is not appropriate to expect telecommunications carriers to subsidise any rollout of broadband networks to areas where deployment is not supported by demand. Such 'field of dreams' type investment strategies are not commercially viable, and potentially represent a significant waste of national resources.

The Australian Government has recognised that telecommunications carriers must be commercially realistic in their investment decisions. The Government has also committed significant resources to increasing the broadband options of Australians in areas where ADSL provision may not be otherwise economically feasible, through initiatives such as the Higher Bandwidth Incentive Scheme. Telstra encourages the Committee to also recognise this principle. In particular, we must avoid the policy distortion referred to in the context of rollout of broadband services by Mr Michael Powell, Chairman of the United States Federal Communications Commission:

> *The Government sometimes acts as like an indignant customer demanding to be served, but who has no intention of paying. We place orders for public policy widgets and expect them to be delivered at provider expense ... We have to recognise that a supplier at the end of he day is going to do very little to fill the order if it does not have an economical way of doing so and getting paid ...* [10]

Telstra is committed to working with Australian communities to facilitate the economic rollout of ADSL technologies. As part of this commitment, Telstra will launch an ADSL Demand Register on 2 October 2003, to enable people to register their interest in ADSL being rolled out to their local area. The Demand Register will be open to anyone who wants ADSL and all ISPs using the Telstra network. Communities will be able to register their interest in obtaining ADSL to enable Telstra to direct its investment in ADSL technologies where demand is greatest. Telstra Wholesale will manage the Register on behalf of the more than 180 ISPs that use Telstra's network, to ensure that all Australian ISPs have access to the Register.

Pair gains systems

Certain types of pair gain technology (PGS) prevent customers from accessing ADSL, although the telephone access service provided caters for voice, facsimile and dial-up modem services such as Internet access. Some types of PGS also provide ISDN capability, and Telstra's latest generation PGS provides for voice, ISDN and ADSL services.

PGS in its simplest form is an electronic box at either end of a copper pair that allows multiple standard telephone services to be carried over that pair. In its more complex form, it comprises a high capacity multiplexer providing voice, data, ISDN and soon ADSL to many hundreds of customer premises connected to the core Telstra network via optical fibre transport systems. The most common form of this type of PGS is a Remote Integrated Multiplexer (RIM).

Telstra is not alone in its use of PGS. It has been estimated that PGS is used in approximately 30 per cent of voice lines in the United States[11], and is used by some European telecommunications carriers. Just under 10 per cent of Telstra's customer access lines are provided via RIM systems. Approximately half of those access lines are prevented from carrying ADSL.

[10] National Summit on Broadband Deployment, Washington D.C., October 25, 2001.
[11] *Outside Plant Evolution*, Outside Plant Magazine, January 2002.

Although only a limited number of customers are affected by PGS, these customers are an important part of Telstra's customer base. Telstra is dedicated to working in a focussed way to provide broadband options to many customers impacted by PGS in their local exchange network. As part of its response to the Estens Report, Telstra has committed to improving the availability of ADSL and ISDN services in regional areas. Telstra is also pursuing a strategy of optimising broadband access in all areas affected by PGS, where demand can be met economically. The details of this commitment are outlined below.

Telstra's initiatives to improve the availability of ADSL services for customers serviced by PGS include:

- enabling customers serviced by RIMs or other PGS who require (and would otherwise qualify for) ADSL to have their PSTN service transferred to an alternate copper path where available;

- extending copper cables to PGS locations from network cable capacity points nearby to enable ADSL to be provisioned from an enabled exchange via a transfer to the copper, where economic to do so;

- providing where economic remotely located exchange-type ADSL equipment within a group of RIMs, and reticulating suitable copper cable to the RIMs;

- introduction of the CMUX AU, an ADSL-capable large customer multiplexer for new growth areas. This unit is now being deployed in areas where RIM systems were previously deployed. ADSL capabilities will be deployed as part of the CMUX AU standard network infrastructure where appropriate from October 2003; and

- introduction of a 'mini' ADSL device, the MiniMux small ADSL multiplexer. This is designed to provide a limited number of ADSL services (24) from existing RIM cabinets where there is sufficient broadband demand to justify the investment, the parent exchange is ADSL enabled and there is space available in the cabinet.

These initiatives, undertaken at Telstra's expense, will make a substantial difference over the next few years to the number of telephone access lines able to be provided with an ADSL broadband service. However, it is important to note that due to the technical limitations of ADSL, Australia and most other countries will never achieve 100 per cent availability of ADSL.

4. Broadband take-up in Australia

International comparisons are an important benchmarking tool. A series of reports from the Organisation for Economic Cooperation and Development (OECD) created a league table ranking broadband penetration in OECD economies[12]. A recently released report from the International Telecommunications Union[13] also compared international broadband penetration rates.

The OECD league table and the ITU Report are an extremely useful source of data about broadband. However, in Telstra's view, comparisons such as the OECD's league table should be viewed in context, as broadband technologies have not been available in all countries for equivalent periods of time. In addition, there are other economic and demographic factors which influence broadband penetration in individual countries.

A contextual approach to international broadband comparisons is supported by the BAG Report, which recommended a shift in focus from viewing take-up rates in isolation, to encouraging comparisons based on measuring the effective use of broadband in key sectors[14]. Telstra submits that this is the preferable approach. Australia's broadband achievements should be measured across the range of economic, regulatory and social factors influencing the effective use of broadband in the Australian economy.

Telstra submits that Australia's broadband take-up rates are consistent with or better than international averages when normalised for the length of time that broadband has been available to Australian consumers. The next section of this submission will show that when account is taken of the regulatory factors that influenced the introduction of broadband technologies in Australia, broadband penetration is exactly where is should be. In addition, broadband growth in Australia is increasing at a rate that is in line with or exceeding the best take-up rates in the OECD.

Australia's relative position on international scorecards is therefore a function adoption of broadband technology by Australian consumers is one to three years behind some other countries on which such international comparisons are based[15].

[12] See for example *Broadband and Telephony Services over Cable Television Networks*, OECD DSTI/ICCP/TISP (2003) (OECD Report).
[13] International Telecommunications Union ITU Internet Report *Birth of Broadband*, September 2003 (ITU Report). Note that Australia's ITU ranking for broadband was generally consistent with its ranking for fixed-line and cellular mobiles.
[14] BAG Report, p43.
[15] AT Kearney Point of View *The State of Broadband in Australia,* September 2003, p2.

5. Broadband take-up in Australia in context

It is important to recall that the emergence of broadband in Australia is a recent phenomenon due to a number of delays and regulatory influences that are unprecedented in the industrialised world. For example, as a result of regulatory delay and some technical problems with ADSL technology - a significant platform for the delivery of high-speed Internet – ADSL has only been commercially available in Australia for three years. Similarly, regulatory hurdles have significantly limited the rollout of cable subscription television in Australia, in turn hampering the penetration of cable modem broadband services.

Telstra submits that the delay in introducing broadband services to Australia and the regulatory constraints on subscription television rollout are important factors influencing penetration levels in Australia relative to other countries.

5.1 Regulatory hurdles for broadband in Australia

Regulatory influences on ADSL broadband

Telstra began trialling DSL technology in Australia in 1996 and 1997, initially in the context of the provision of subscription television. The opportunities of ADSL broadband soon became evident, and Telstra issued an open tender for an equipment supplier for ADSL technology in 1998. Telstra then commenced its rollout of ADSL technology, and commenced commercial trials of ADSL broadband Internet.

In March 1998, the Australian Competition and Consumer Commission (ACCC) announced an inquiry into the declaration of an unconditioned local loop (ULL). Telstra was ordered by the ACCC not to introduce ADSL services to Australian consumers until the declaration of the ULL, and until Telstra could make a wholesale ADSL offering available to its competitors.

In effect, the ULL inquiry meant that Telstra could not commence its commercial ADSL rollout to provide broadband Internet to Australian consumers until the ACCC completed its regulatory process, and a framework could be developed to allow other ISPs to install their own equipment in Telstra's exchanges.

The ULL was not declared by the ACCC until 4 August 1999 – a period of some 17 months after the inquiry into ULL was announced. However, the introduction of ADSL could still not occur until the completion of a regulatory process with the Australian Communications Industry Forum (ACIF) to develop a Facilities Access Code, and resolve other industry issues. The ACIF process was completed in August 2000 – a further 12 months after the ACCC's decision to declare the ULL.

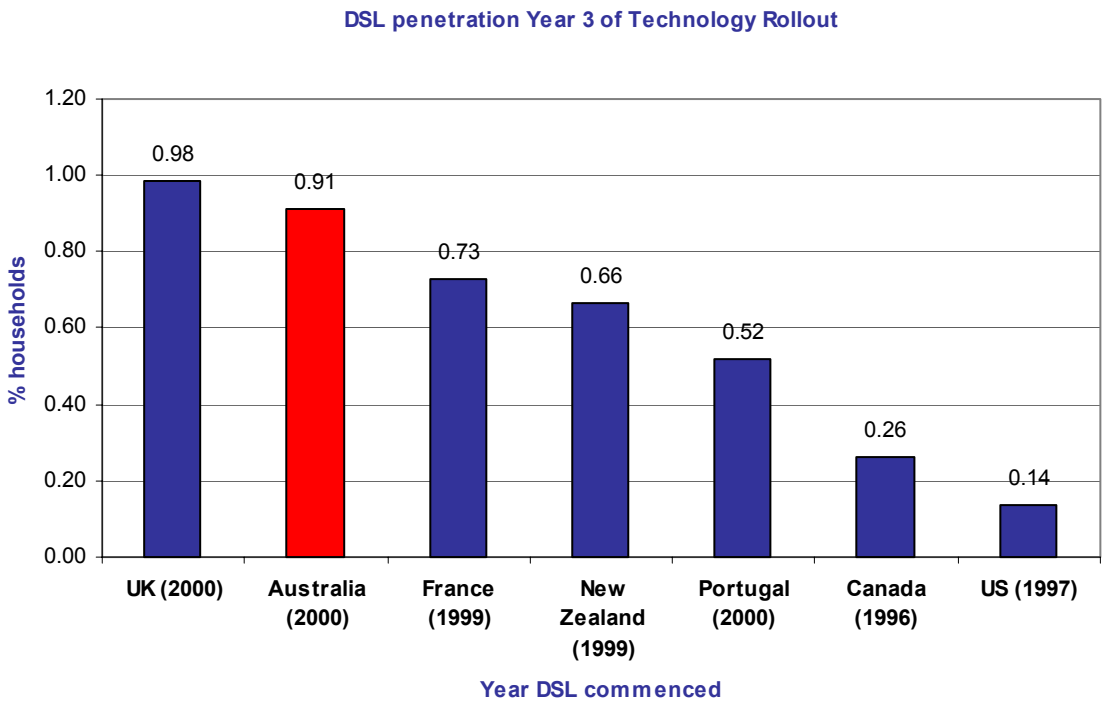
It must be noted that some technical difficulties with ADSL equipment implementation also impacted on Telstra's ability to rollout broadband technology. However these technical difficulties were resolved prior to the completion of the regulatory process.

Telstra submits that the delay in introducing ADSL broadband to Australian consumers must be taken into account when considering Australia's relative broadband penetration rates.

The impact of delay

Figure 5.1 compares Australia's current level of ADSL penetration with other countries at the end of year three of DSL rollout in those countries. This graph shows that Australia's actual achievement in terms of ADSL broadband take-up is exemplary.

Figure 5.1 International comparisons of year three penetration rates



Based on the growth rates achieved in 2002 in Australia (or year three of ADSL broadband), it is possible to predict the impact of this delay on Australia's international broadband rankings. Statistical analysis of the data used to create the OECD league table shows that if broadband had been introduced one year earlier in Australia Australian broadband penetration at the end of 2002 would have been 69% higher[16].

Telstra submits that when normalised for broadband start dates, Australia's broadband penetration rates are exemplary, and continue to grow at a rate that exceeds international averages.

Regulatory hurdles for HFC cable

There are also a number of regulatory factors that have affected the penetration of cable TV in Australia, which directly impact on broadband take-up using HFC cable modem. These regulatory factors include:

- anti-siphoning laws – which prevent subscription television providers from competing with free-to-air networks on a level playing field to acquire premium sports content;

[16] Source: NECG analysis of OECD data, September 2003.

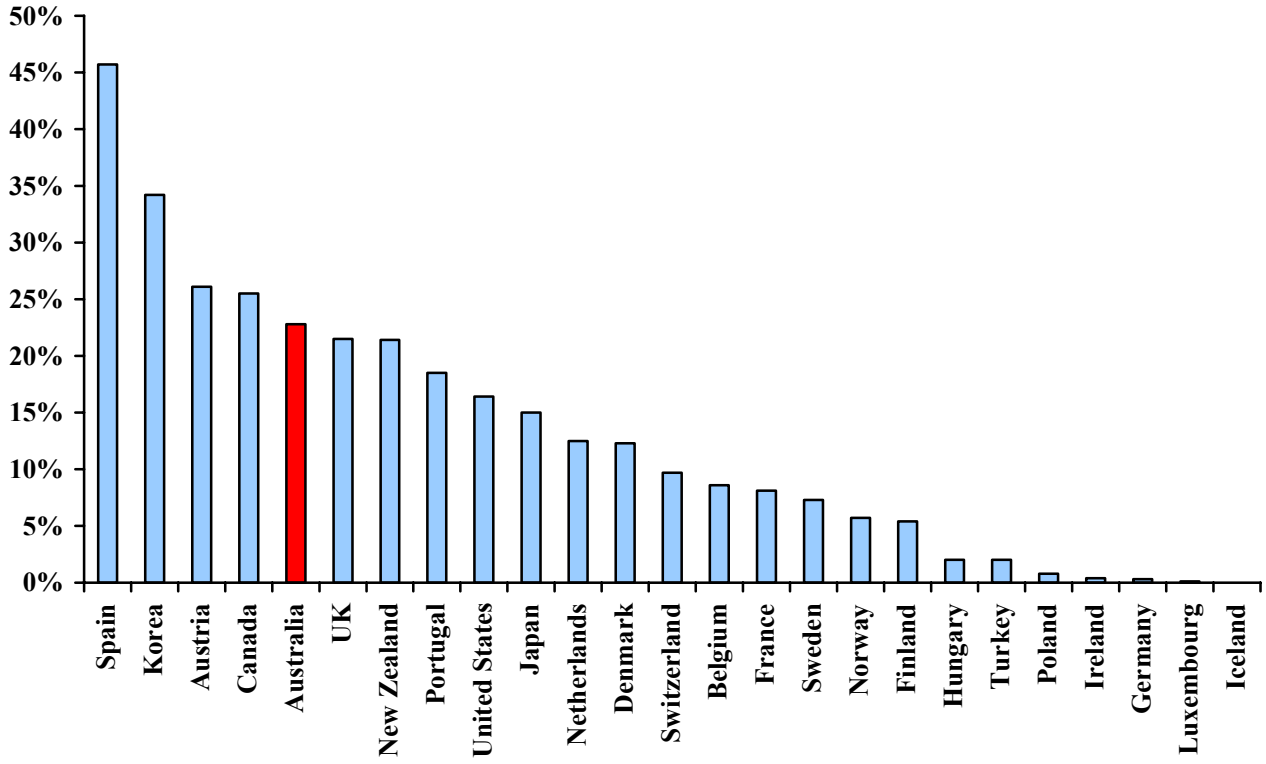
- HFC cable broadcast spectrum used for analogue and digital television simulcast being tied up during the simulcast obligation period rather than being available for the provision of new services; and

- regulation of analogue subscription television access services and delays in decision making processes in relation to digital subscription television access services.

As a result of these regulatory impediments, Australian subscription television penetration rates are low when compared to cable TV penetration rates in comparable countries. Telstra submits that the regulatory factors influencing subscription television penetration rates also affect the total number of consumers who are willing to access broadband Internet via HFC cable.

Figure 5.2 illustrates that despite the regulatory impediments to subscription television penetration in Australia, the rate of cable modem broadband take-up in Australian households that subscribe to subscription television is the fifth highest in the OECD. This indicates the success of cable modem broadband penetration in Australia, despite the impediments to overall penetration rates for HFC cable.

Figure 5.2 Cable modem take-up in subscription television households[17]



In short, if the Australian regulatory environment were less hostile to subscription television, penetration levels for cable television would be higher. Given Australia's strong record in selling cable modems to subscription television households, it is fair to assume that cable broadband penetration levels would also be much higher.

[17] Source: OECD Report

5.2 Broadband penetration in context

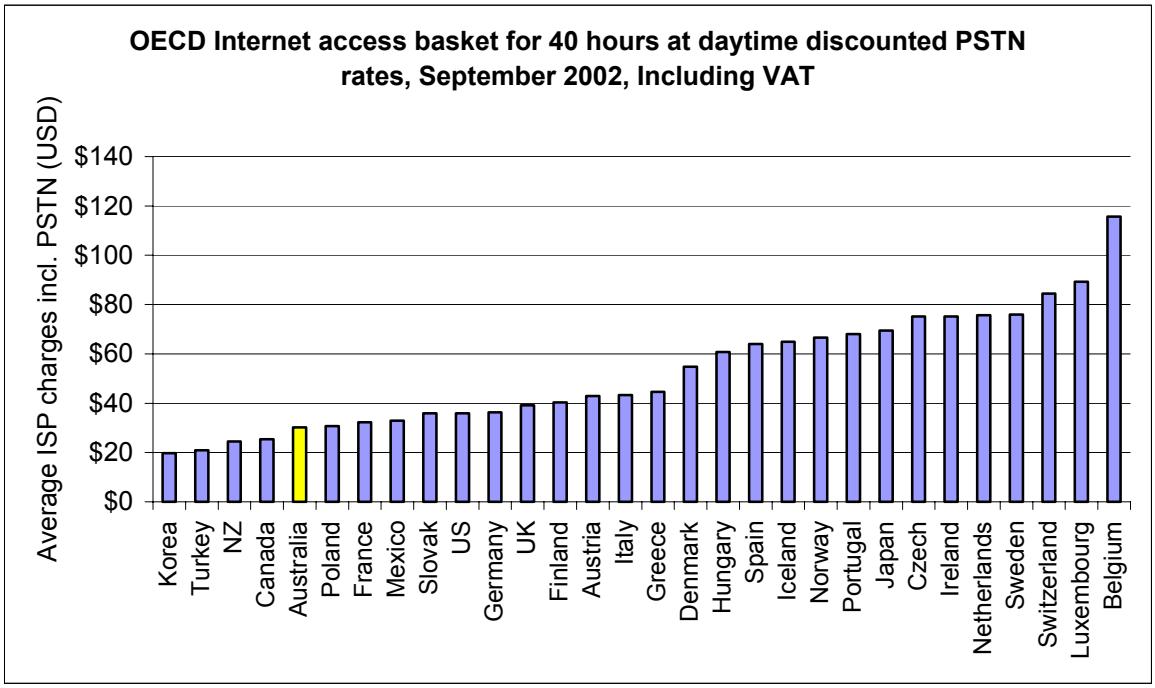
The comparative start date for broadband rollout in each country is not the only factor that can influence broadband penetration rates. A recent paper by the Network Economics Consulting Group *Quantifying differences between broadband penetration rates for Australia and other countries* (NECG Paper) quantified the impact of regulatory and other economic factors on broadband take-up by consumers. The NECG Paper is attached as an Annexure to this submission.

The NECG Paper used a statistical model based on the data set used to create the OECD broadband league table. The model found that broadband penetration could be explained by the age of the technology, real GDP per capita, and the penetration of subscription television. NECG applied the model in the context of significant economic factors affecting Australia and found that:

> *...Australian broadband penetration rates are not significantly lower that the average of the countries in the OECD data base, when due account is taken of basic economic factors explaining penetration rates ...[O]ne cannot conclude, based on a simple economic model and formal statistical criteria, that the Australian penetration rate is significantly lowed than [the OECD] average*[18].

Telstra submits that an additional factor affecting the level of broadband penetration in Australia can be attributed to Australia's increasingly isolated position in the developed world of providing customers with untimed local calls to access the Internet via the Public Switched Telephone Network (PSTN). Few countries have as cheap and as high quality dial-up facilities as Australia.

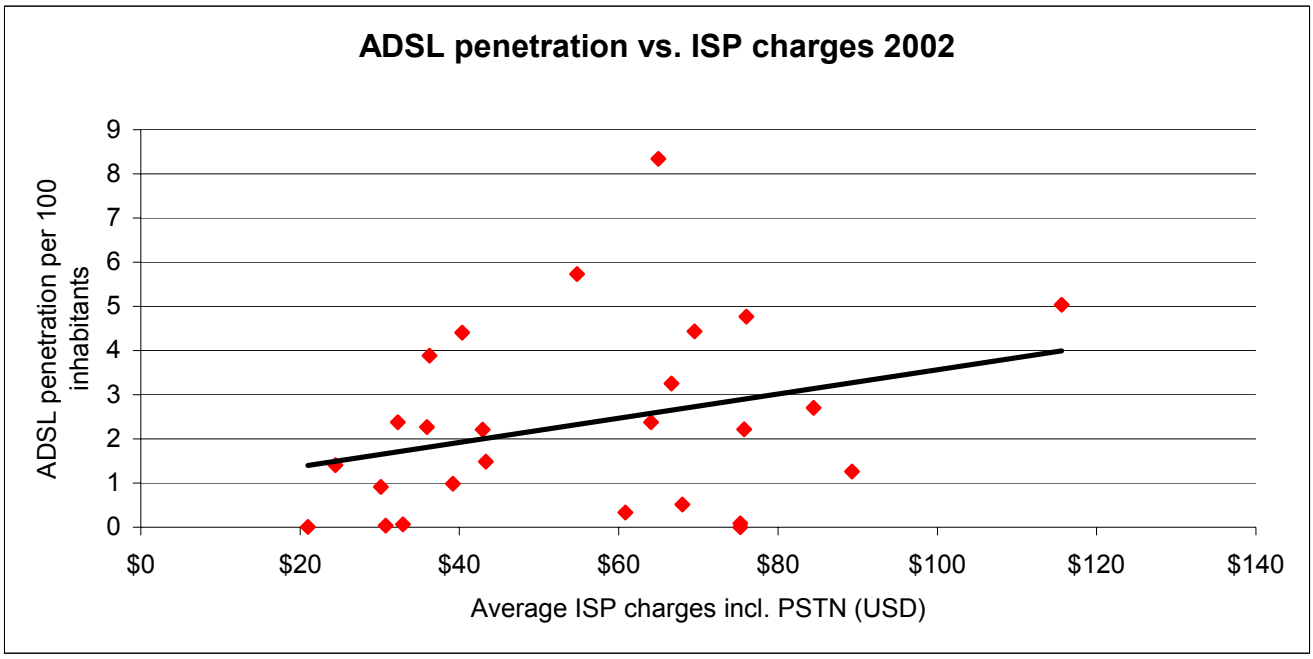
Figure 5.3 Narrowband pricing comparison[19]



[18] NECG Paper, p7.
[19] NECG analysis of OECD data, September 2003.

Telstra believes that the price of narrowband access is a significant factor influencing the willingness of Australian consumers to subscribe to broadband Internet. In other words, the lower the price of dial-up Internet, the lesser incentive customers have to subscribe to broadband Internet. Figure 5.4 illustrates this influence.

Figure 5.4 The effect of dial-up prices on broadband subscriptions[20]



Demographics can also significantly influence broadband penetration. For example, population density and a large proportion of multi-dwelling housing can positively influence broadband penetration levels, as the costs of infrastructure deployment are reduced and a large number of people live within the technical delivery distance for DSL technology. South Korea and Iceland have achieved internationally envied levels of broadband penetration. In Iceland over 92 per cent of the population lives in urban areas, with 62 per cent living in Reykjavik alone[21]. In South Korea, 49 per cent of the population lives in Seoul, more than 50 per cent of the population lives in multi-storey, multi-dwelling apartment blocks and 98 per cent of the population lives within 4 kilometres of a broadband-equipped exchange[22].

Telstra believes that these economic, regulatory and demographic factors must be taken into account when considering the OECD's league table, and Australia's broadband performance. The delayed start of broadband and the regulatory impediments to subscription television take-up are two significant factors influencing Australia's ranking on the OECD league table. However, other factors such as the level of government

[20] Source: NECG analysis of OECD data, September 2003. Canada and Korea have been excluded as outliers since Government subsidies have promoted ADSL penetration in these countries. The series of average ISP prices and ADSL penetration has a correlation coefficient of 0.30. Series with perfect correlation have a correlation coefficient of 1.
[21] ITU Report, p32.
[22] Kiedrowski T, *Telecoms: Broadband in South Korea*, InterMedia Vol 30 No 5, 5 December 2002, p6.

support for infrastructure investment[23] and even climate can also impact on broadband take-up rates from country to country.

Telstra submits that the NECG Paper supports Telstra's belief that when viewed in the appropriate context, Australia's standing on the OECD league table is already consistent with OECD averages, and is an excellent achievement in just three years.

5.3 The continued growth of broadband in Australia

Broadband take-up rates in Australia continue to grow at a rate that greatly exceeds those of other countries. The number of broadband Internet connections in OECD countries grew by 67% in 2002[24]. In contrast, the ACCC's most recent *Snapshot of Broadband Deployment*[25] found that in the 12 months to March 2003 broadband connections in Australia rose by 112%. Similarly, Telstra recorded a 133% growth in broadband accounts over the period April 2002 – April 2003[26].

In the context of ADSL broadband, the number of digital subscriber lines (DSL)[27] worldwide grew by 40% in the second half of 2002. In the same period, Australian ADSL connections grew by 70.5%[28]. Significantly, Telstra Wholesale connections increased by 400% in the 12 months to August 2003.

Telstra believes that Australia is coming to the end of the 'early adopter' phase for broadband, and the next few years will see its adoption as a mainstream technology. Adoption of a new technology is a phenomenon that typically exhibits an S-shaped pattern over time (ie, slow adoption in the early stages followed by an increasing rate of adoption and eventually saturation)[29].

The NECG Paper considers whether current Australian penetration rates are consistent with a typical S-shaped diffusion pattern and concludes:

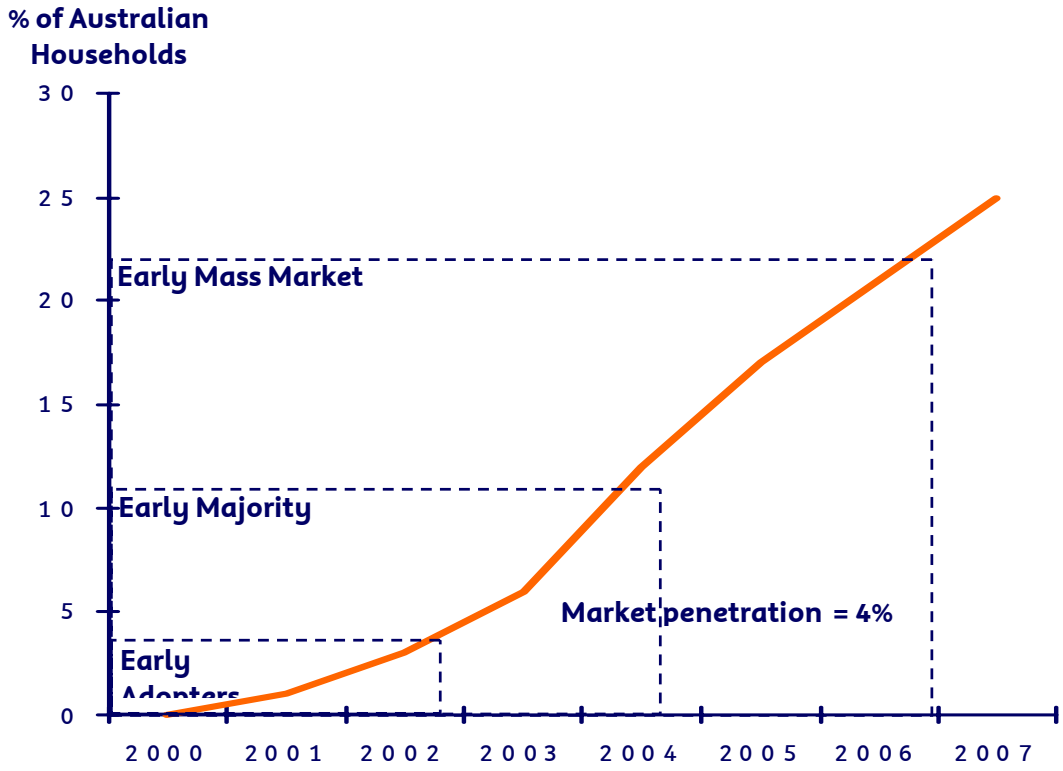
> *...it would be incorrect to infer from the behaviour to date that Australian penetration rates are not tending towards high levels. Indeed, the acceleration in broadband take-up over the course of the last year suggests that the diffusion process is moving into the stage where penetration rises rapidly*[30].

In just three years, Australia has not only achieved broadband penetration that is consistent with OECD averages when normalised for start dates, but also a growth rate that is excellent when compared to international averages. Telstra believes that Australia is on track to continue this strong growth.

Figure 5.5 illustrates the projected future increase in Australian broadband growth rates.

[23] For example, the Governments of Sweden, Korea, The Netherlands, France and Taiwan have all made large investments in national broadband infrastructure.
[24] OECD Report, p3.
[25] As at 31 March 2003.
[26] Figure includes ADSL and cable broadband, including Telstra Wholesale subscriptions.
[27] Note: ADSL is one type of DSL.
[28] Point Topic *DSL Benchmarking Report* for Quarter 4 2002.
[29] NECG Paper, p10.
[30] NECG Paper, p12.

Figure 5.5 Broadband Forecast 2001 – 2007 (Australia)[31]



Telstra submits that these strong predicted growth rates suggest that the outlook for broadband in Australia is extremely encouraging and international comparisons about Australia's relative position at the end of 2002 should not be the cause of undue alarm.

[31] Source: IDC Australia, 2003; Accenture, *Lighting the Next Broadband Revolution*, 2003. Listed broadband penetration as at December 2002.

6. The price of broadband in Australia

It is an open question as to the extent to which the price of broadband influences the rate of broadband penetration in a country. The Western Australian Technology and Industry Advisory Council found that:

> *...there appears to be little correlation between affordability and take-up. For example, South Korea performs poorly in terms of affordability of both cable and ADSL services. This is despite the fact that they have the highest take-up of broadband services in the world. Similarly, France has a broadband take-up rate fractionally higher than Australia despite the fact that both ADSL and cable services are significantly more affordable in Australia (measured as a percentage of per capita GDP) than in France. Again this suggests that the impediment to broadband take-up is not ability to pay but willingness to pay*[32].

Nevertheless, Telstra submits that Australian broadband prices are comparable with international pricing levels.

6.1 Australian broadband prices

In general terms, Australian broadband prices compare favourably with other industrialised countries and Australian ADSL and cable prices are more affordable than many overseas jurisdictions[33]. The most recent A.T. Kearney Point of View on the State of Broadband in Australia found that:

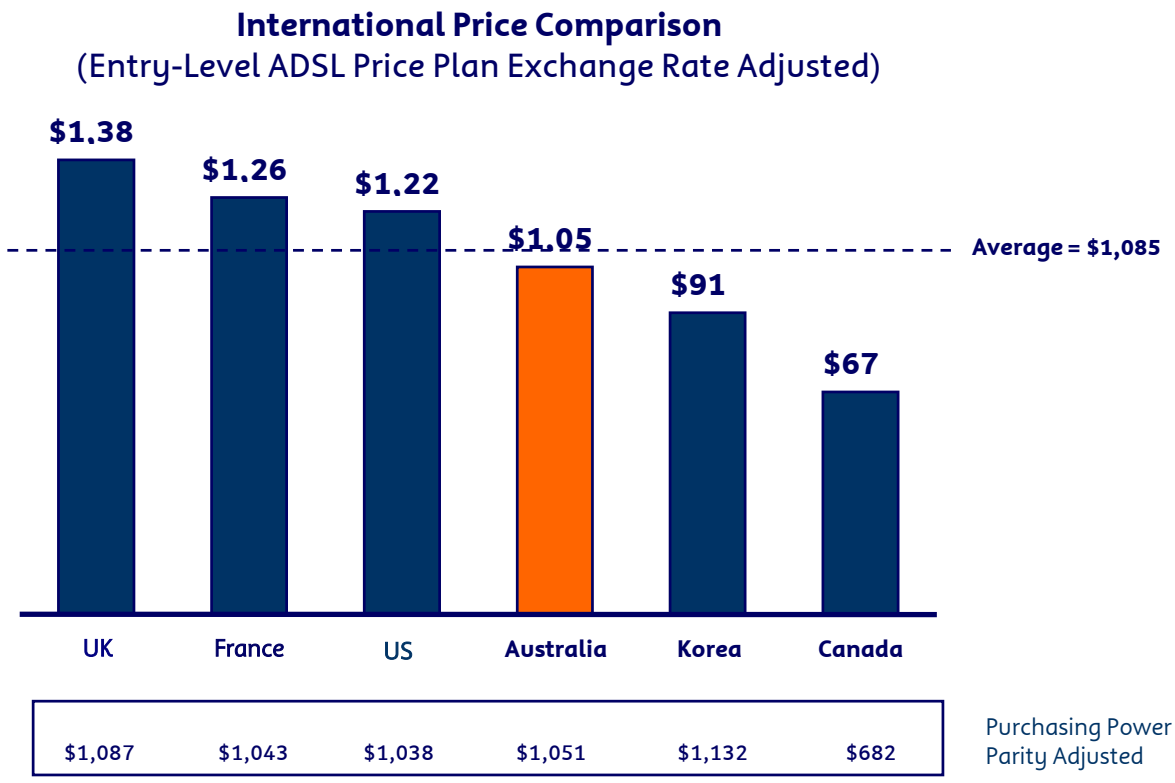
> *Australian prices are at-par with prices globally, between $50 to $70 per month*[34].

In addition, Telstra's wholesale broadband charges already match British Telecom's recent drastic price reductions in the United Kingdom[35].

Figure 6.1 shows that Australian ADSL prices compare favourably with international broadband pricing levels.

[32] Allen Consulting Group, *Enabling a Connected Community: Developing Broadband Infrastructure and Services in Western Australia* (Allen Consulting Report), commissioned by Western Australian Government Technology and Industry Advisory Council, September 2003, http://www.wa.gov.au/tiac/broadband/broadband-07.htm, p10. Note that the Allen Consulting Report compares the *affordability* of broadband services rather than a pure exchange rate adjusted pricing comparison.
[33] (Allen Consulting Report), p10
[34] See pages 2 and 7. Amounts are in Australian dollars, purchasing power parity adjusted. These findings by AT Kearney do not reflect some reporting of this issue by the *Australian Financial Review*.
[35] Reuters, *BT cuts Wholesale Broadband Prices*, April 2003.

Figure 6.1 International DSL broadband prices ($AUD)[36]



Telstra's retail and wholesale broadband packages are priced to encourage wide market take-up of the various products, whilst covering the costs of provision and operation of the services. All Australians can access broadband services via ADSL, cable or 1-Way Satellite from approximately $60 per month, once connected. However, cost differences in the delivery of some underlying broadband technologies, such as 2-Way Satellite, are reflected in the pricing plans (see Figure 6.2 below).

Figure 6.2 is a comparison table of entry-level high-speed and fast Internet products offered by Telstra BigPond. Monthly costs can be even lower than this if customers are able to take advantage of loyalty discounts available when more than one Telstra product is purchased. Customers can also access the pricing schedules of the more than 200 alternative ADSL suppliers and Telstra's cable and satellite broadband competitors. However the cost of Telstra's ADSL and cable access products is cheaper than many domestic competitors, including AOL/7, TPG, OzEmail and iPrimus[37].

[36] Source: AT Kearney May 2003; Telstra analysis based on the list prices of the market leading service provider at May 2003 (market entry or basic package price, including installation charges and average excess usage for entry level products). Purchasing Power Parity based on OECD purchasing power parity based comparative price levels, February 2003

[37] As at 16 July 2003 for 256/64 kbps, minimum 500Mb monthly usage allowance or entry level allowance, 12 month contract, 1 port modem, including all nominal fees (professional installation, contract and connection fees) and excluding any short-term special discounts.

Figure 6.2 Telstra's broadband and ISDN pricing[38]

Service	Monthly usage allowance[39]	Installation or connection charge	Excess usage charge	Monthly cost
ADSL	From 500 megabytes	Self-installation available from $129.00	15.9 cents per megabyte	From $59.95 once connected
HFC Cable	From 500 megabytes	Installation from $399 (or $189 if customer owns a BigPond cable modem)	15.9 cents per megabyte	From $54.95 once connected
1-Way Satellite	1 gigabyte	Hardware $328.90 plus installation. Self-installation available from $108.90[40]	26.4 cents per megabyte	From $60 once connected
2-Way Satellite	From 300 megabytes	Hardware $699. Installation from $399	18.9 cents per megabyte	From $120 once connected
BigPond™ Regional Connect	1 gigabyte	$700 for installation and connection	26.4cents per megabyte	From $120 once connected (plus 30 cents per hour connection costs)
ISDN	From 500 megabytes	Installation charge (conversion from PSTN) $190.30	16.9 cents per megabyte	From $39.95 for BigPond ISDN[41]; from $84.95 for ISDN Access and BigPond

[38] Prices current at 8 September 2003.
[39] Monthly usage allowance means combined upload and download data transfer (except for some traffic provided from time to time by Telstra).
[40] Note that customers unable to access ISDN may be eligible for a Government rebate on the cost of installing satellite equipment.
[41] Plus call charges.

6.2 Satellite broadband pricing

Over 75 per cent of telephone access lines in Australia are able to deliver broadband using ADSL technology. However, Telstra is aware of some affordability issues that have arisen for some customers in rural, regional and remote Australia in relation to accessing high-speed Internet via satellite.

The pricing of satellite services is driven by several cost elements, including:

- the high cost of the customer equipment required;
- high installation costs, particularly in remote and rural Australia; and
- the cost of transponder capacity.

In addition, Telstra does not own its own satellite, but must purchase satellite capacity on the commercial terms imposed by the owners of each satellite.

A subsidy is available to customers who wish to access broadband via 1-Way Satellite and who cannot access ISDN. Under the Special Digital Data Service Obligation scheme, a Government rebate funded by the telecommunications industry is available to these customers of the lesser of:

- 50% of the cost of purchasing and installing satellite equipment; and
- $765.

The costs charged for satellite broadband reflect the cost of providing the technology and delivery of the service. However, Telstra is committed to investigating options to provide lower cost 2-Way Satellite options for Australians who cannot access broadband via cable or ADSL, or are ineligible for Government satellite subsidies. Through a Telstra subsidiary REACH, Telstra has signed a memorandum of understanding with the Shin Satellite Company of Thailand (SSC), which has three satellites offering low-cost high capacity broadband to Asia, Europe and Africa. SSC plans to launch an IP STAR satellite to cover Australia and New Zealand in 2004. This is merely one option Telstra is exploring in an endeavour to improve the affordable bandwidth available to remote users.

6.3 Broadband charging models

Telstra's broadband access plans adopt a 'user pays' pricing model. In this model, customers are charged an additional usage fee once they have reached their download limits in each billing period.

Telecommunications carriers incur costs for customer transfer of data. These costs are passed on to consumers via charging models. Excess usage also comes at a cost, which must be borne by either users or carriers. A 'user pays' model allows prices to be more closely aligned with costs, ensuring that customers pay for what they receive and producers can develop a sustainable business. The model also enables businesses to accurately pass on data charges to their customers.

The vast majority of Telstra's customers do not incur fees for exceeding their monthly download limits. Only 16% of BigPond users on 500 megabyte download plans exceed

this limit, at an average additional usage cost of $124 per annum. Less than 1% of users significantly exceed these limits.

Telstra BigPond's access plans are designed to help Australian consumers to move to broadband Internet in an appropriate way and have been extremely well received with strong customer take-up of the 500 megabyte and 1 gigabyte plans. Telstra estimates that approximately 80 per cent of new subscription requests are for these two plans. Most Telstra BigPond broadband customers use less than 1 gigabyte of data per month. From a usage perspective, using 1 gigabyte of data is approximately equivalent to doing **all** of the following:

- visiting 1000 web pages;
- receiving 1000 personal or business emails;
- downloading 50 MP3 files and 100 documents;
- downloading 10 software programs;
- downloading 100 family photos;
- downloading 10 movie trailers and 10 hours of streaming audio; and
- playing 10 hours of online games[42].

If Telstra were to move to a flat pricing model, additional usage charges would need to be spread across the entire customer base. This would have the practical effect of entry-level users subsidising high bandwidth users, which may have a significant effect on low-use customers.

Telstra proactively assists customers to monitor usage levels by:

- providing the BigPond Usage Toolbar, an 'always on' usage meter that tracks a customer's plan usage;
- emailing customers with alerts when the customer reaches 50%, 80% and 100% of their chosen monthly download limit;
- issuing monthly newsletters with tips for securing computers against viruses which may impact on bandwidth usage;
- providing unmetred content to subscribers; and
- providing tiered broadband offerings to enable customers to shift between plans as their usage needs change.

Flat free pricing models can also have negative effects on network congestion and on low-end users. As a result, service providers in the United Kingdom are considering moving to a 'user pays' system to cover the cost of data downloads[43]. The provision of subsidised downloads to consumers can also have a negative effect on service providers.

[42] See http://www.bigpond.com/home/support/tools/usagecalc.
[43] Twist, J, *Goodbye to a flat rate for broadband?*, BBC News Online16 September 2003.

In South Korea, where enormous amounts of data can be transferred for a flat fee, the incumbent telecommunications carrier Korea Telecom is yet to show a profit from broadband, the number two market share holder, Hanaro Telecom, is facing mounting broadband losses, and the next two competitors are in liquidation[44].

There are a large number of ISPs in the Australian broadband market, providing consumers with a wide choice of pricing plans. Telstra submits that broadband pricing models are not a significant factor influencing broadband penetration in Australia. Further, the imposition of additional usage charges is an equitable way of distributing the cost of data transfers amongst service users.

[44] *Wheels fall off Korean broadband* miracle, Communications Day 4 September 2003, p3; *High Speed Internet Service a Way of Life in* Korea, New York Times, 5 May 2003.

7. The quality of broadband services in Australia

In order to convince consumers of the broadband value proposition, high-speed Internet services must be secure and reliable. As a result, Telstra is committed to ensuring that Australian broadband customers use delivery platforms that achieve world best practice standards of security and reliability. In line with this commitment, Telstra has introduced a self-imposed Service Level Guarantee (SLG) for ADSL broadband customers. The SLG promises customers a rebate when their broadband service is not available for at least 99 per cent of the time each month[45]. This initiative is without peer internationally.

ADSL is a technology still in its infancy. ADSL platform performance in a number of overseas countries (including the United States and the United Kingdom) was the subject of much criticism in the early phase of broadband services in those countries.

Telstra is proud of its achievements in providing such a high quality of service with such a new technology. Over the 12 months to August 2003, Telstra's ADSL network achieved an average reliability of 99.6 per cent. Ninety-five per cent of Telstra's ADSL customers have experienced network reliability levels of 99 per cent or more since January 2003. Telstra's goal is to achieve a network reliability figure of 99.99 per cent.

Increased network reliability means a commitment to investigating technical problems with the implementation of a new technology. By July 2003, Telstra had investigated and eliminated the cause of approximately 76 per cent of issues experienced by customers using ADSL technology[46]. Telstra's target is to achieve the elimination of 86 per cent of all technology issues by December 2003. This work in improving network reliability has consequentially reduced the need to return SLG payments to its customers. For example, in the month of June 2003, less than 3 per cent of customers were eligible for an SLG payment.

It is normal for a new or developing technology to attract a higher level of customer difficulties – and resultant complaints - than developed products or services. However, despite the relatively recent introduction of ADSL services in Australia, consumers are able to achieve a high quality and reliable broadband experience. Only 8 percent of complaints about Telstra's services to the Telecommunications Industry Ombudsman involve Telstra BigPond. This figure has stayed constant for several months, despite the strong growth in broadband customer numbers during this time.

Telstra submits that the reliability of broadband services in Australia is not an impediment to the willingness of consumers to subscribe to high-speed Internet access services.

[45] The SLG means that if the availability of the Telstra BigPond ADSL network falls below 99% in a month (as measured per the terms and conditions of the guarantee), the customer will automatically receive a percentage rebate off their monthly subscription fee in their next bill. Network availability below 99% but equal to or greater than 97% entitles the customer to a 10% rebate; below 97% but equal to or greater than 94% entitles the customer to a 20% rebate; below 94% entitles the customer to a 50% rebate on their monthly subscription fee.

[46] Based on Telstra's internal estimates.

8. Competition issues

Telstra submits that the market for broadband services in Australia across all delivery platforms is fiercely competitive and should not be the target of unnecessary political and regulatory pressure.

8.1 Competition in broadband markets in Australia

There are currently over 200 ISPs competing for the provision of one or more types of broadband services in Australia. Effective competition is helping to deliver broadband services to Australian consumers over ADSL and HFC cable at prices that are more affordable than in many other countries[47].

In the market for ADSL broadband, Telstra is required in practice to supply wholesale ADSL at an equivalent to regulated rates. Optus' HFC cable footprint mirrors 80 per cent of Telstra's cable footprint and competitors such as TransACT and Neighbourhood Cable have rolled out cable infrastructure in areas where Telstra's HFC network is not available. TransACT claim to have achieved a broadband penetration rate of 30 per cent of homes passed by the company's cable, a penetration rate that is high by any standards. The satellite broadband market is also becoming increasingly competitive, with 24 providers competing to deliver services to the entire Australian landmass[48].

The growth of Telstra's Wholesale business is another indicator of vibrant competition in broadband markets. Wholesale ADSL connections increased by more than 300 per cent in the 12 months to June 2003. Telstra Wholesale is connecting people to broadband through more than 180 ISPs across Australia.

Media reports frequently highlight the achievements of Telstra's competitors to achieve strong consumer growth and sales in broadband markets. Examples of this are the strong growth of iiNet, the expansion of Swiftel into the Sydney market and the increasing expansion of the subscriber bases of companies such as Pacific Internet, Primus Australia, WestNet and Neighbourhood Cable[49].

The BAG Report found that there is clear evidence of competition emerging in the delivery of broadband services across all platforms. The Report recommended that:

> *If the broadband market is going to continue to develop, the regulatory framework must focus on encouraging efficient market outcomes, sustainable competition and removing barriers to entry. This will necessitate a lean regulatory regime that provides incentives for ongoing investment and innovation in broadband infrastructure and services while advancing the long-term interests of end users*[50].

Further, the Technology and Industry Advisory Council to the Western Australian Government found that:

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[47] Allen Consulting Report, http://www.wa.gov.au/tiac/broadband/broadband-07.htm, p10.
[48] Source: http://www.broadbandchoice.com.au, accessed on 10 September 2003.
[49] See *DSL surge steps up Swiftel plans*, West Australian, 2 September 2003, p34; *WA broadband companies connect with east coast*, Financial Review, 18 August 2003, p16; *Broadband buoys Primus and Pacific Internet*, exchange 15/31, 15 August 2003, p6; *Neighbourhood Cable says broadband take-up rate triple national average*, Communications Day, 13 August 2003, p1.
[50] BAG Report, p40.

Given that broadband is still a relatively new technology, it is too early to conclude that less than the socially optimum take-up or availability of broadband services ... represents enduring market failure[51].

Telstra submits that there is strong competition in all broadband market sectors, and no evidence of market failure that would justify increased regulation in this area. Telstra supports the BAG's view that to encourage broadband growth in Australia there must be a lean regulatory regime that will encourage investment in infrastructure by all players in the market. There is no justification for regulatory intervention in a broadband market that is growing at a rate that exceeds that of the majority of industrialised countries.

8.2 The impact of technology convergence on broadband penetration

Developments in technology have led to the situation where consumers can access a range of communications products and content over individual technology platforms. For example, HFC cable customers can access a range of Internet and television services via their cable modem.

A view that has been expressed in some public debate about broadband take-up rates in Australia is that divesting Telstra of either its HFC cable network or its share in FOXTEL would somehow increase the number of broadband subscriptions in Australia. Similar views have been expressed by the ACCC, which argued that divestiture of Telstra's HFC network would:

- introduce a new infrastructure competitor able to supply voice, broadband and Subscription television services to the 2.5 million premises serviced by Telstra's HFC; and

- provide incentives for Telstra to invest actively in its copper network to provide for the delivery of a range of advanced broadband services[52].

The previous section of this submission has illustrated the strong – and growing – levels of competition in markets for the supply of broadband services in Australia. Telstra submits that technology convergence is not a threat to competition in broadband markets, and:

a) there is no evidence to suggest that divestiture of either Telstra's HFC cable network or its share in FOXTEL would lead to an increase in broadband penetration in Australia;

b) the level of competition in Australian broadband markets suggests a market that is functioning effectively, and certainly does not indicate a level of market failure that would justify such heavy-handed regulatory intervention;

c) regulatory solutions such as those suggested by the ACCC in its *Emerging markets in the communications sector* report (ACCC Report) would not achieve the effects anticipated by the ACCC, nor lead to increased broadband subscriptions in Australia; and

[51] Allen Consulting Report, http://www.wa.gov.au/tiac/broadband/broadband-07.htm, p2.
[52] ACCC *Emerging market structures in the communications sector*, June 2003, pxvii.

d) there has been extremely strong investment by Telstra in copper-based broadband technology (ADSL), of more than $1 billion to date. This infrastructure is available to all ADSL providers.

Infrastructure ownership and broadband penetration

Telstra believes that claims that Telstra's ownership of an HFC cable network reduces competitive pressure on Telstra to market broadband services cannot be supported on the facts. Such claims ignore not only the real pressure from competition in Australian broadband markets, but also the commercial incentives for Telstra to migrate customers to broadband from dial-up Internet services.

Telstra's retail incentives flow in part from Australia's dial-up Internet market being one of the most extensive and successful in the world.[53]. A large factor for this success is Australian consumers' access to untimed access to local calls for customers using the PSTN to connect to the Internet. Telstra therefore has a very real commercial incentive to encourage customers to make the transition from dial-up to broadband, to reduce average local call holding times and to effectively bring local call costs down to a closer alignment with regulated prices.

As well as ignoring Telstra's incentives to encourage the growth of its broadband business, claims that ownership of cable networks by incumbent carriers has a negative effect on broadband penetration are not supported by international evidence, despite misleading and poorly informed claims to the contrary.

Telstra has decided to examine carefully the international data to assess whether there is any relationship between broadband penetration and ownership of cable networks by incumbent telecommunications carriers. Research undertaken by NECG clearly shows that there is no statistically significant relationship between cross-ownership of PSTN and cable networks and low broadband take-up. Indeed if anything, the data indicate the opposite to be true.

NECG examined the full OECD broadband penetration database to see if there was any correlation between broadband penetration and participation by the incumbent telecommunications carrier in either the largest cable network operator, or any cable network operator. The analysis allows NECG to conclude that:

> *...cross-ownership of the largest cable and copper networks by the incumbent carrier ... does not have a statistically significant adverse impact on broadband penetration*[54].

In addition, although the dummy variables for the ownership influence of incumbent carriers could not be considered statistically significant:

> *[t]he direction of influence implies that divestiture or removal of the influence of the incumbent telecommunications carrier would lead to* ***lower****, not higher, penetration*[55].

Telstra submits that assertions that the company's ownership of an HFC cable network is an impediment to broadband take-up in Australia ignore the very real commercial incentives for Telstra to invest in its broadband business and are not supported by available data regarding international broadband penetration levels.

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[53] National Office for the Information Economy *The Current State of Play: Australia's Scorecard*, 2002.
[54] NECG Paper, p2.
[55] NECG Paper, p9.

Regulatory intervention

Telstra does not wish to provide a detailed response to the ACCC Report in this submission regarding suggestions that Telstra should be forcibly divested of its HFC cable network and part share in FOXTEL. However, Telstra submits that the heavy-handed regulatory approach suggested by the ACCC in its Report is not justified by accepted standards for regulatory intervention, any demonstrated failure in broadband markets, nor any resultant benefits to consumers.

Australian broadband markets are becoming increasingly sophisticated. Prices are declining and consistent with international pricing levels, service range and quality are improving and competitive pressure is increasing across all delivery platforms.

It is an accepted tenet of Australian competition law that regulation should only be introduced where the benefits of regulation to the Australian community exceed the substantial costs of regulation. Further, compelling evidence of market failure, or evidence that existing competitive disciplines are not effective in advancing consumer interests should support any argument in favour of regulation.

The ACCC Report fails to provide any such evidence. The ACCC has not established that competition has failed in either the market for cable broadband, or in broadband or Subscription television markets more generally. The Report also fails to show how customer interests are being impaired due to existing market structures.

There is also some criticism in the ACCC Report that Telstra's failure to provide telephony services over its HFC cable network is an example of deliberate under-use of its existing asset[56]. However, the HFC network was never designed to carry telephony, and cannot economically be adapted to do so.

Rather than being an impediment to competition, there are many consumer benefits flowing from Telstra's position as a technology-neutral supplier of broadband services. Carriers who are able to service their customers across a variety of delivery platforms are able to supply the optimal technology solution to meet a customer's individual bandwidth needs. Where single-network carriers may have an incentive to promote either ADSL or cable to their customers, irrespective of actual needs, Telstra is able to select from cable, ADSL, satellite, ISDN or wireless technology to find the most appropriate and technologically feasible way to deliver high-speed Internet access to individual customers.

Telstra submits that competition in broadband markets in Australia is alive and well and broadband subscriptions will continue to achieve the strong growth levels associated with the history of new technology diffusion in Australia. Telstra encourages the Committee to adopt the approach of the BAG Report in recommending the maintenance of a lean regulatory regime to encourage continued investment in the infrastructure that underpins this exciting growth area for the Australian economy.

[56] ACCC Report, pp58-59.

9. Telstra's commitment to broadband in Australia

Telstra is committed to the growth of broadband in Australia. Telstra BigPond is the only ISP committed to making broadband Internet available to all Australian consumers, over the full range of terrestrial, cable and wireless delivery platforms currently available in Australia.

Telstra's strategy to achieve increased broadband growth is based on boosting customer numbers by removing barriers to entry and improving the consumer experience with exciting and innovative content and applications. This strategy is supported by a commitment to demand-led infrastructure deployment, which will be supported by the upcoming ADSL demand register.

Only Telstra is empowering consumers by introducing the ADSL Demand Register to enable communities to establish the demand for ADSL in their region. Only Telstra is investing more than $1 billion in rolling out the ADSL network and absorbing the risk that comes with such a massive investment. In addition, Telstra continues to play an industry leadership role in establishing and administering the $60 million Telstra Broadband Fund and supporting the development of high quality Australian broadband content.

Alongside Telstra's commitment to making broadband available to all Australians, Telstra is working to make the installation of Telstra BigPond broadband more cost and time effective by providing support for self-install options for satellite and ADSL platforms. For example, Telstra BigPond currently uses more than 400 retail outlets or customer 'touch points' to sell BigPond ADSL self-install kits, which allow customers to self-install ADSL broadband within 12 minutes, once connected. A similar self-install option will shortly be introduced for cable broadband customers.

Telstra is committed to working to enable all Australians to access broadband via a variety of delivery platforms, including maximising customer outcomes for access lines impacted by PGS. Telstra is undertaking a number of initiatives to explore options to make satellite broadband more affordable for Australians who cannot access broadband via cable or ADSL. In addition, Telstra is conducting technology studies in relation to various wireless broadband systems. As well as rolling out a number of WiFi Hotspots, Telstra is investigating the suitability and economics of wireless technologies. For example, Telstra is currently exploring the feasibility of a wireless broadband application called CDMA 1x EV DO, which would operate more than 30 kilometres from base stations and allow data downloads at broadband speeds. Telstra will continue to test these new technologies in its quest to provide wider broadband options to Australian consumers.

Recent research suggests that aggressive marketing is a factor in achieving high levels of broadband penetration[57]. This research is consistent with Telstra's own experience. A BigPond marketing campaign this year reducing the upfront costs of broadband installation had the effect of increasing broadband subscriptions by 30-40% over 3 months. A JB Were Telecommunications Sector commentary noted:

> *We believe there is a clear link between Telstra's discounted installation during the quarter and the strong growth in residential broadband connections*[58].

[57] *The State of Broadband in Australia*, AT Kearney, August 2002, p2
[58] JB Were *Telecommunications Sector Commentary*, 19 June 2003, p2.

Telstra's significant investment in marketing the benefits of broadband to Australian consumers will have a positive impact on demand for broadband services, which is not limited to customers of Telstra Big Pond.

Telstra will continue to promote the value proposition for broadband to the Australian community. This is important for Telstra's own goal of developing broadband as a growth engine for the company and for the broader goal of achieving the BAG's vision for the benefits of broadband to Australia.

Telstra is leading the challenge to encourage broadband take-up by all Australians. However, the Australian Government, local communities and the communications and media sector must also take up this important challenge.

10. Strategies for increasing broadband take-up in Australia

Telstra submits that there are a number of factors that can influence the success of broadband in an economy.

10.1 Factors influencing broadband take-up

A recent report by AT Kearney found that the differentiator between Australia and the current world leaders in broadband take-up:

> *... seems to be a combination of government programs, aggressive marketing by service providers, compelling content, solid service delivery and (for Korea and Sweden) favourable demographic factors*[59].

A similar view was expressed in the BAG Report, which found:

> *The level of broadband take-up in Australia is likely to remain relatively low unless there is sufficient compelling content available ... While current technologies offer the end-user an array of delivery platforms, take-up is unlikely to expand unless consumers are presented with content that fully embraces the functionality that the infrastructure can provide*[60].

Telstra submits that the availability and price of broadband in Australia is already consistent with or better than world best practice standards. In order to drive sustainable further growth in broadband, consumers need to see a clear value proposition for investing in high-speed Internet access. Telstra believes that the availability of compelling content and applications is essential in order to make this happen.

As part of the company's commitment to content development, Telstra established the Telstra Broadband Fund in 2002 to promote the development of content, applications and tools to drive broadband take-up. The Fund is valued at up to $60 million and comprises the following amounts:

- $10 million – Telstra cash contribution (over 2 years);
- $20 million – Telstra contribution of bandwidth through existing access products (over 2 years); and
- Up to $30 million – Telstra will match industry contributions to the Fund, dollar for dollar, for up to $15 million over 5 years.

Over $4 million of cash and bandwidth grants were administered in the first round of the fund, and second round applications are currently being invited.

Telstra is also investing in broadband content ventures that will have appeal to customers, primarily in the areas of games, sport and music. Some initiatives include:

- 'The Basement', Australia's only twenty four hour Internet music station;

[59] *The State of Broadband in Australia*, AT Kearney Point of View, August 2002, p2.
[60] BAG Report, p35.

- GameArena, a dedicated games channel;
- the Official AFL site; and
- content from the V8 Supercar Championship Series.

As Telstra has argued for sometime in relation to subscription television services, reform of anti-siphoning laws would also have a positive effect on the range of content available for broadband services. Legislative reform in this area would enable premium sports content to be broadcast live over broadband channels rather than delayed.

10.2 The role of Governments in driving demand for broadband

Telstra believes that Governments at all levels have an important role in both promoting the benefits of broadband to the Australian community and providing infrastructure investment to allow the widest possible deployment of broadband enabling technologies.

Telstra supports targeted Government financial support for broadband investment, such as the recently announced $142.8 million National Broadband Strategy and Higher Bandwidth Incentive Scheme. However, Telstra believes that Governments should also work to facilitate partnerships between industry, communities and various levels of Government to deliver broadband products and services to communities. For example, the WirelessWest project announced in June 2002 is a partnership between State and Commonwealth Governments, Telstra and local community groups to deliver an expanded CDMA network in Western Australia. An 18-month pilot program between Telstra and local councils to deliver a wireless mobile network in Gippsland has increased broadband access in the region. Similar public-private partnerships have been used with great success in Canada to drive that country's excellent broadband take-up rates.

The BAG Report highlights the need for Government support to facilitate broadband investment in areas where consumer demand levels may not otherwise make technology rollout economically feasible:

> *Given the high costs and risks associated with private sector development of broadband infrastructure in regional areas, demand aggregation measures are required to leverage public sector demand as a catalyst for wider deployment of broadband services to regions. Governments could use existing public sector infrastructure in regional areas more effectively by extending cross-sectoral infrastructure-sharing arrangements. Coordinated, strategic investment in regional areas by funding programs and public sector agencies might improve outcomes in regional areas, helping to maximise the economic and social gains from investment*[61].

This view was supported by the Western Australian Government Technology and Industry Advisory Council which found that a broadband strategy which is overly focussed on 'technology-based' or 'supply-side' actions is likely to fail:

> *An effective strategy needs to be encompassing, also taking account of demand-side factors (eg using demand aggregation as a lever)*[62].

[61] BAG Report, p24.
[62] WATIAC Report, http://www.wa.gov.au/tiac/broadband/broadband-02.htm, p3.

Broadband infrastructure deployed to schools, hospitals or Government departments can also provide network benefits to the wider community. Demand aggregation strategies – where customers pool demand to achieve cheaper pricing – can be used to support the delivery of broadband to communities. Governments can play a strategic role in purchasing broadband services by employing these strategies. Government-supported public-private partnerships could enable regional communities to benefit from the bandwidth opportunities arising from public sector infrastructure investment.

Demand aggregation strategies have been used to great effect by the South Korean Government and have contributed to the phenomenal growth of broadband in that country. From 1995-2000 the Government spent US$521 million on facilitating broadband, mostly on high-speed networks linking government agencies, schools and universities[63].

Telstra is committed to exploring opportunities to work with local communities and all levels of Government to expand the broadband options available to Australian consumers. A recent success in this area is the North West and New England Telecommunications Project, a public-private partnership to deliver high speed Internet to the New England and North West regions of New South Wales. Telstra will provide Government Wideband Internet to eight TAFE sites, ten University of New England sites and 31 regional health sites. Flow-on broadband benefits will be available to other consumers in the area. Similarly, the Launceston Broadband Project is a joint initiative between Telstra and the Commonwealth Government to provide $30 million in funding over five years to establish a real-market testing environment for broadband applications and services.

The success of community broadband projects in the United Kingdom illustrates another partnership model for increasing the broadband options available to Australian communities. There are many areas of the United Kingdom where broadband is not available and it is unlikely that infrastructure to these areas would be economically feasible in the short term[64]. Community groups and local councils in the United Kingdom in these areas have contributed to the cost of bringing broadband infrastructure to communities, where investment by carriers would not be otherwise economically feasible. Similar models may be used to increase the bandwidth choice available to Australian consumers.

Telstra looks forward to finding new and innovative ways to partner with Governments and communities to foster the effective use of broadband technologies by all Australians.

[63] Richardson M, *Asia Connects with Faster Net – Korea,* International Herald Tribune, 26 November 2001, pp4-7.
[64] Note: unlike Australia, satellite broadband is not universally available in the United Kingdom.