

# **LAST CHANCE TO FUTURE-PROOF DATA SERVICES**

by

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Telecommunications Inquiry

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### **About the Author**

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Louise Staley is a Board member of the Australian Institute of Family Studies. From 1998 to 2002 Louise was a Commissioner of the Australian Film Commission and Deputy Chair of the Commission from 2000 to April 2002.

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## *Introduction*

# LAST CHANCE TO FUTURE-PROOF DATA SERVICES

by Louise Staley

*"With any future sale of Telstra, they want a guarantee that if the company is no longer majority owned by the Government, regional Australia will not be left behind the cities in terms of accessing these new telecommunications technologies.*

*I refer to this as future-proofing, because people in regional Australia want a fail-safe mechanism that ensures they will be able to share in the telecommunications services of the future."*<sup>1</sup>

Senator the Hon. Richard Alston said this on 12 July 2002. This submission is about where we are now with data services and suggestions for how to "future-proof" Broadband services.

This submission examines some of the assumptions underlying the conclusions of the TSI and subsequent Government announcements. It concludes that in relation to Broadband Internet services, non-urban areas are poorly served compared to metropolitan areas.

This submission concentrates on home-office (including on-farm) and residential customers.

The Broadband Advisory Group (BAG) recognised the importance of rolling-out Broadband across Australia in its consultation report.

*"The development of broadband communications networks is one of the key national infrastructure questions for policy makers across the developed world. These data networks – capable of conveying voice, sound, video and other multimedia traffic at high speed as well as providing high speed access to the Internet – represent the nervous system of any advanced economy and are therefore seen as a key element in national competitiveness.*

*As Michael Powell, Chairman of the United States Federal Communications Commission has said: "The widespread*

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<sup>11</sup> Alston, The Hon. Senator Richard. "Future-proofing of Telecommunications Services in Regional Australia." 12 July 2002. (<http://www.dca.gov.au/>)

*deployment of broadband infrastructure has become the central communications policy objective today*<sup>2</sup>.

Due to the large size and the low population density of much of Australia, government intervention will be required if all Australians are going to be able to receive proper 2-way Broadband interconnectivity. This will cost substantial amounts of money but will add significantly to Australia's competitiveness and economic performance.

*The Allen Consulting Group found that widespread business involvement in the information economy could deliver an extra 2.6 per cent GDP growth by 2004-05. However, this would be cut back to around 2.0 per cent and there would be a significant negative impact on employment, wages, output and industry if broadband Internet access did not become widely available in the same time period. Under the model, the missing 0.6 per cent of GDP would be worth \$12 billion to Australia in the peak year.*<sup>3</sup>

There is also much that can be done to improve the use of the Internet for current users restricted to dial-up or ISDN connections. As the Internet is optimised for Broadband use, many vital Australian sites such as banks and government agencies and tertiary education distance learning sites, have become too big to be usable by dial-up lines. Full utilisation of the Internet for purposes such as E-Learning and Tele-Health is only possible with true Broadband access however many consumers with slower speeds could still bank and access information if the sites were optimised for a slower speed.

This submission supports the sale of the remaining 51% of Telstra and notes that the current state of telecommunications, particularly Broadband, has occurred within majority Government ownership. Improving access to Broadband is not a function of the ownership of Telstra but the potential sale of the remaining 51% of Telstra provides the opportunity of a large amount of money, directly related to telecommunications, becoming available to improve Broadband and other telecommunications services.

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<sup>2</sup> Broadband Advisory Group (BAG) (2002). "Report on the Broadband Advisory Group Consultative Forums." July 2002, page 3.  
<http://www.noie.gov.au/Projects/consult/BAG>

<sup>3</sup> Ibid.



## Chapter 1

### ACHIEVEMENTS OF RECENT INITIATIVES AND GENERAL ADEQUACY OF SERVICES (TOR 1)

The extent to which the Government's response to the Telecommunications Service Inquiry (TSI), other Government initiatives and further commercial developments have so far addressed the community concerns identified in the TSI Report, particularly with regard to:

- the timely installation, repair and reliability of basic telephone services;
- adequate mobile phone coverage at affordable prices; and
- reliable access to the Internet, and whether ongoing delivery of the Government's response will meet the TSI concerns within a reasonable timeframe.

To what extent have the Government's TSI response, other Government initiatives and further commercial developments addressed community concerns, particularly in relation to fixed telephone, mobile telephone and Internet services?

Has your community received funding support under the Networking the Nation program, and if so, how effective has this been?

Do you think telecommunications services in your community have improved since 2000? Are these services now generally satisfactory in your view? Could these services be improved, and if so, how?

#### **The Government's TSI Response & Other Government Initiatives**

##### **TSI Response 4. Internet Assistance Program (IAP)**

In response to concerns raised in the TSI about Internet speeds, the Government announced it would establish-in collaboration with Telstra-a \$50 million IAP to operate for three years. The aim of the IAP is to help users maximise Internet speeds and achieve equivalent speeds of at least 19.2 kilobits per second for web and email applications. The program includes an Online Help Service to provide advice to users and a Technical Support Service to help users whose problems cannot be resolved by online advice.

### Implementation status

The IAP has been operating in all regional areas served by Telstra Country Wide-excluding the outer extended zones since 3 September 2001.

An independent advisory panel has been established by the Government to ensure the IAP is competitively neutral and, where relevant, help consumers with other issues such as dispute resolution.

Subject to review in late 2001 and early 2002, the IAP will be extended to include metropolitan areas from 4 March 2002.

The Commonwealth signed a Deed of Agreement with Telstra on 29 September 2001, which sets out funding contributions and other responsibilities of the parties.

The introduction of the IAP is to be welcomed as it effectively addresses access to a minimum dial-up speed. It is important that any regulatory regime is married to an assistance program to ensure rural and regional users have a known minimum Internet connection speed.

Chapter 6 of the TSI deals with data and mobile services. The summary concisely addressed the most significant problem in the provision of data services to regional and rural people.

*However there is a significant number of customers, particularly in rural and remote Australia, for whom access to the Internet over their standard telephone lines is inadequate or not possible and who must therefore consider higher priced, high data speed options. **These customers are disadvantaged by not being able to make a price/quality choice between dial-up access and high speed services.**<sup>4</sup>(emphasis added)*

Chapter 6 relies heavily on the ACA's Digital Data Inquiry of August 1998 for its analysis of reasonable data speeds,

*The Digital Data Inquiry found that both email and web browsing are possible and effective at 14.4 kbps, although, obviously, considerably slower than at 28.8 kbps. However, browsing web pages with complex graphics would be quite difficult at 14.4 kbps but quite acceptable at 28.8 kbps.*<sup>5</sup>

The assertion that "e-mail and web browsing are possible and effective at 14.4Kbps" above is based on analysis summarised in the table below.

Access Network	Short E-mail	Simple Web Page	Average Web Page	Complex Web Page
	1kbyte	20kbytes	50kbytes	100kbytes
2.4kbit/s PSTN	4 sec	1 min 14 sec	3 min 5 sec	6 min 10 sec

<sup>4</sup> Telecommunications Service Inquiry (2000). Connecting Australia. 30 September 2000, page 99. Available from [http://www.telinquiry.gov.au/final\\_report.html](http://www.telinquiry.gov.au/final_report.html)

<sup>5</sup> Ibid., page 100.

modem 9.6kbit/s PSTN	1 sec	19 sec	46 sec	1 min 33 sec
modem 28.8kbit/s PSTN	1 sec	6 sec	15 sec	31 sec
modem 56kbit/s PSTN	1 sec	4 sec	9 sec	18 sec
modem 64kbit/s ISDN B channel	1 sec	3 sec	6 sec	13 sec
128kbit/s ISDN 2xB channels	1 sec	1 sec	3 sec	6 secs

**Table 1 – TSI Impacts of Transmission Rates on Response Times<sup>6</sup>**

In preparation of this submission I visited various web pages and measured the bytes received. The results of this is summarised in Table 2. The choice of speeds is the DDSO minimum, two usual modem speeds and ISDN.

<sup>6</sup> Australian Communications Authority (1998) Digital Data Inquiry Report, Public Inquiry Under Section 486(1) of the Telecommunications Act 1997. 15 August 1998, page 12. Available from <http://www.aca.gov.au/publications/reports/digital/>

Bits per Second	Page Size Downloaded	19.2 kbits/s	28.8 kbits/s	56 kbits/s	64 kbits/s
Kbytes per Second		2.1	3.2	7.2	8.2
"Simple" Web Page	20kbytes	9 secs	6 secs	3 secs	2 secs
"Average" Web Page	50kbytes	23 secs	16 secs	7 secs	6 secs
"Complex" Web Page	100kbytes	47 secs	31 secs	14 secs	12 secs
Regional Telecommunications Inquiry <sup>7</sup>	12kbytes	5 secs	4 secs	2 secs	1 secs
Parliament House <sup>8</sup>	111kbytes	52 secs	35 secs	15 secs	14 secs
Telstra Countrywide <sup>9</sup>	214kbytes	1 min 40 secs	1 min 7 secs	30 secs	26 secs
Telstra <sup>10</sup>	192kbytes	1 min 30 secs	1 min	27 secs	23 secs
White Pages <sup>11</sup>	202kbytes	1 min 35 secs	1 min 3 secs	28 secs	25 secs
National Australia Bank Internet Banking <sup>12</sup>	401kbytes	2 min 47 secs	1 min 52 secs	50 secs	44 secs
Deakin University Online <sup>13</sup>	116kbytes	1 min 13 secs	54 secs	36 secs	14 secs

**Table 2 Current Impacts of Transmission Rates on Response Times**

The TSI conclusion that "e-mail and web browsing are possible and effective at 14.4Kbps" was based on the assumption that the average web page was 50Kb. Since then there has been major changes to the way many corporate web pages are delivered. Many are now created using server side scripts that create the page once it is requested. This has allowed an increase in complexity and size. The widespread use of animated scripts and changeable messages and advertising has also increased the size of web pages. As more consumers switch to Broadband it is expected that the increase in page size will continue as website owners optimise their sites for Broadband.

<sup>7</sup> [www.telinquiry.gov.au/](http://www.telinquiry.gov.au/)

<sup>8</sup> [www.aph.gov.au/](http://www.aph.gov.au/)

<sup>9</sup> [telstra.com/countrywide/](http://telstra.com/countrywide/)

<sup>10</sup> [telstra.com](http://telstra.com)

<sup>11</sup> [www.whitepages.com.au/wp/](http://www.whitepages.com.au/wp/)

<sup>12</sup> [www.national.com.au/](http://www.national.com.au/) then Internet Banking Login then Login

<sup>13</sup> [topclass.deakin.edu.au/](http://topclass.deakin.edu.au/)

To actually use the Internet for useful tasks, the average web page size assumed in the TSI is too low. At the IAP speed of 19.2Kbps it takes almost three minutes to log onto Internet banking and bring up account balances. Telstra's home page takes 1½ minutes. A more meaningful estimate of average web page size would be calculated by measuring the size of the top 100 visited sites by Australians, and the size of all the major banking, Government, information service and tertiary distance education sites.

The TSI found "approximately six per cent of customers, more highly concentrated in rural and remote areas, experience data speeds which would appear inadequate for meeting common residential needs and must consider higher priced alternatives to get reasonable data speeds."<sup>14</sup>

The speed that that inquiry believed was adequate to achieve "common residential needs" was 14.4Kbps. The IAP has increased this to 19.2Kbps. Given the increase in web page size it must be seriously questioned whether 19.2Kbps is sufficient "for meeting common residential needs."

This point is raised by Dr Jennifer Curtin in her paper for the Commonwealth Parliamentary Library where she notes, "realistically, 28.8 kbps would no longer be considered sufficient data speed for regular and effective Internet use, and this was recognised in the Coalition Government's requirement, announced in September 1998, that under the Universal Service Obligation, all Australians would have access on demand to a 64 kbps download service."<sup>15</sup>

Looking beyond residential needs, Cisco Systems has proposed a Broadband Primer to explain the levels of bandwidth required for specific applications. Some of these applications such as E-Learning and Tele-Health have particular use in rural and regional communities. It is noteworthy that all of the applications require higher bandwidth than 64 Kbps.

Application	Minimum	Ideal
Tele-working	110 Kbps	1.5 Mbps – 7 Mbps
Videoconferencing	110 Kbps	800 Kbps
Tele or E-Learning	110 Kbps	1.5 Mbps – 7 Mbps
Tele-Medicine	110 Kbps	1.5 Mbps – 7 Mbps
Video Telephony	70 Kbps	200 Kbps
Near Video on Demand	1 Mbps	1.5 Mbps – 7 Mbps
Movies on Demand	1 Mbps	1.5 Mbps – 7 Mbps
Audio on Demand	110 Kbps	700 Kbps
Digital Television	1 Mbps	7 Mbps

**Table 3 Cisco Broadband Primer<sup>16</sup>**

<sup>14</sup> Telecommunications Service Inquiry (2000). page 104.

<sup>15</sup> Curtin, Dr Jennifer (2001). A Digital Divide in Rural and Regional Australia? Canberra, ACT: Parliament of Australia, Department of the Parliamentary Library, 2001

<sup>16</sup> Cisco Systems Government Affairs, Broadband Primer, 27 September 2001. Available from [www.cisco.com](http://www.cisco.com) as quoted in the AICTEC submission to the BAG Enquiry, page 18.

In its web marketing material, Telstra makes various claims about ISDN and calls across the PSTN. It is of interest to note that Telstra, here and in other places, reminds people that their PSTN network can only guarantee speeds of 2.4Kbps.

***Is ISDN better than my existing telephone service?***

*For ordinary telephone calls, the voice quality of ISDN may not improve significantly and it will cost more than an analogue service in rental, but the cost of the calls may be less.*

*Ordinary analogue telephone lines were designed for voice calls only and Telstra's telephone service is specified to carry data information at just 2.4 Kbps, significantly less than the current modem speeds of up to 56 Kbps. Although some modems may attain speeds higher than 2.4 Kbps, Telstra cannot guarantee any more.<sup>17</sup>*

The TIO also makes the point that the minimum speed for data is 2.4 Kbps:

*"Users should remember that the current guaranteed speed on a phone line is 2.4kbits. The TIO does not have the power to request that a telephone provider upgrade the line if it is found to be fault free and running at this guaranteed speed."<sup>18</sup>*

The TSI looked at maximum speeds achievable over the PSTN. Figure 1 is from the TSI Chapter 6. This is based on data supplied from Telstra and so actually reflects the structure of their network rather than maximum speeds achievable if the PSTN was upgraded to 0.9 mm copper across the network. However, this figure does demonstrate that the further a user is away from the exchange, the lower the maximum possible connection speed.

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<sup>17</sup> [www.telstra.com.au/onramp/faq.htm](http://www.telstra.com.au/onramp/faq.htm)

<sup>18</sup> [www.tio.com.au](http://www.tio.com.au)

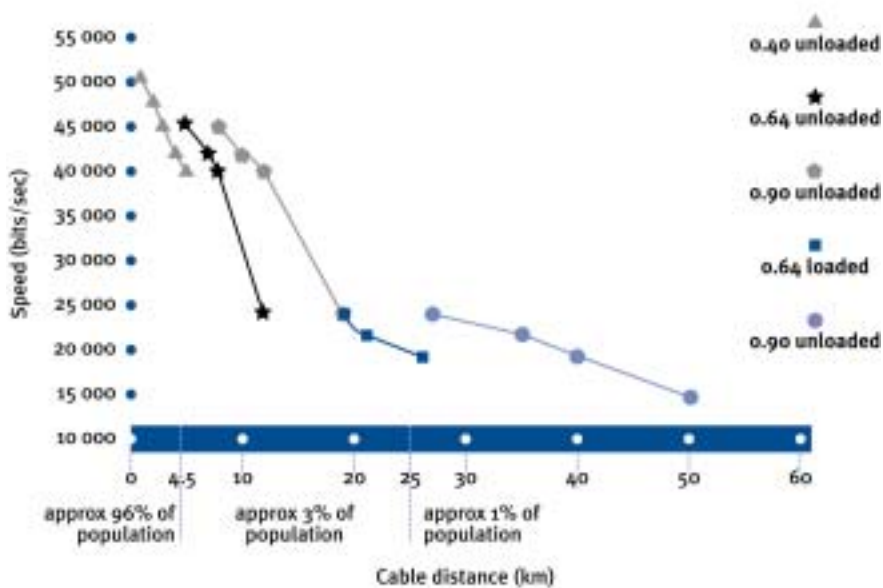


Figure 1 Maximum Download Data Speeds Over the Telephone Line

To further upgrade the PSTN is estimated to cost many billions of dollars. The limitations of the technology over distance suggests this is not justified as the resulting speeds will not allow rural and remote consumers effective access to the continuing expansion of web page size. However, for e-mail only users 19.2Kbps remains a useful speed.

### Broadband Overtakes Narrowband Usage in the US

Latest data released in the US shows Broadband Internet usage has overtaken narrowband usage. Broadband accounted for 51% of the total hours spent online in January 2002. The US is increasingly moving towards broadband with the total Broadband home users increasing by 67% over the year to January 2002 and total dial-up users falling 6% over the same period. Home broadband users now account for 21% of total home users.<sup>19</sup> As this migration has occurred pricing of dial-up services has fallen. It is now possible to purchase a dial-up connection for US\$6.50 per month that includes unlimited data download.

**Submission: Increases in size and complexity of commonly used Web pages mean that Internet connection speeds achievable by rural and remote users over the PSTN are no longer acceptable for regular and effective Internet use and effectiveness will continue to deteriorate as web page size is optimised for Broadband.**

<sup>19</sup> Neilson Ratings (2002). Broadband Net Surfing Accounts for More than Half of All Time Spent Online, According to Neilson/Netratings. 5 March 2002, [www.neilson-netratings.com](http://www.neilson-netratings.com)

**TSI Response 13. Reviews of Universal Service Obligation (USO) contestability**

Recommendation 3: That the Government offer up-front incentives to potential alternative universal service providers in return for their commitment to supply, as a standard service, substantial improvements above the legislated minimum.

Recommendation 4: If the contestability processes announced by the Government do not have the effect of materially improving service levels in regional, rural and remote areas, the Government should reassess policy measures, including the USO, with a view to ensuring the contemporary telecommunications needs of all Australians are met.

In response to TSI Recommendations 3 and 4, the Government announced it would continue to monitor the effectiveness of USO contestability and review it after 12, 24 and 36 months of operation. This would allow regulatory arrangements to be fine-tuned and help to determine whether USO contestability should be extended to additional areas. The review of USO contestability pilots in 2002 is to examine specifically whether up-front incentives should be offered to potential alternative universal service providers in return for their commitment to supply-as a standard service-substantial improvements above the legislated minimum.

**Implementation status**

The USO contestability pilots commenced on 1 July 2001. An internal Department review of the pilots is planned for December 2001, while the ACA will commence the first of three annual reviews in July 2002.

As yet there is no data available as to the impact of contestability on the USO. It is therefore impossible to judge its effectiveness.

**Submission: that the RTI incorporate the findings from the first ACA Annual Review into USO contestability into its report.**

**TSI Response 14. Review of telecommunication specific competition regulation**

Recommendation 1: That the Productivity Commission's review of telecommunications-specific competition regulation have regard to the differing levels of competition across Australia and consider whether a greater recognition of those different circumstances should be incorporated into competition regulation.

Recommendation 2: That the Productivity Commission's review also be asked to specifically consider the implications of current pay television programming arrangements for the development of telecommunications competition in regional Australia and consider whether any additional regulatory measures are needed to facilitate access to pay television programming.

Recommendation 6: That all reviews of telecommunications-specific regulation be required to explicitly consider the impact of those regulatory mechanisms on the development of competition in regional, rural and remote Australia.



In response to TSI Recommendations 1, 2 and 6, the Government announced it would direct the Productivity Commission to consider in its review the implications of developing telecommunications competition across the country, particularly in regional Australia, and to consider the current pay television programming arrangements.

The Government also announced ongoing reviews of telecommunications-specific regulation would be required to consider the regulatory impact on competition development in regional, rural and remote areas.

**Implementation status**

The above direction to the Productivity Commission was made in January 2001 and the Commission submitted its final report to the Government on 21 September 2001. The Government is developing its response to the Commission's report.

Separately, legislation to address specific issues in relation to telecommunications competition regulation was passed in the Parliament on 20 September 2001.

As noted above, the Government has fully implemented this TSI recommendation.

Despite the direction from the Minister to the Productivity Commission "to consider in its review the implications of developing telecommunications competition across the country, particularly in regional Australia," the final report contains no specific recommendations in relation to regional telecommunications. Indeed, it appears that the Commission's reading of the TSI report was largely driven by a desire to find examples of where the TSI was encouraged by growing competition in non-metropolitan Australia. For example the Productivity Commission quoted the TSI

*"The Committee judged that:*

*... the continued development of competition throughout Australia, combined with key government initiatives (such as USO contestability) will have a positive effect on services over the next few years. These developments are likely to materially improve the services available to rural and remote consumers (p. 165)."*

The Productivity Commission did not recommend additional regulation for regional Australia believing that the ACCC has sufficient flexibility to include regional differences when defining markets.

The Productivity Commission also undertook analysis of the pay television market in Australia and made specific reference to regional Australia. This submission is not concerned with the availability of pay television in Australia except in regard to the question of whether the availability of pay television impacts on the availability of Broadband data services.

The key argument for considering pay television in concert with Broadband data services was put to the Productivity Commission by Neighborhood Cable who, "argued that: While pay TV income is denied broadband service

operators, broadband infrastructure will not be deployed.”<sup>20</sup> Additionally SaskTel “believes that facilities-based competition is dependent on new entrants being able to develop networks at a reasonable cost and with multiple services: ... the new entrant must be able to offer more than one service over its network so that it is able to achieve economies of scope on its investment — deriving revenues from more than one line of business.”<sup>21</sup>

The ACCC in its submission to the Productivity Commission stated,

*“Because of technical convergence, a regional operator’s competitive position in telecommunications can also be promoted by quality pay TV programming through the following links:*

- the range of services that can be carried over broadband networks can be offered as bundled services;*
- pay TV programming quality is a key factor in attracting customers to a bundle of services and, thus, increasing the overall up-take of services; and*
- higher revenues per subscriber and economies of scope from bundling can be critical to funding the costs of network roll-out.”<sup>22</sup>*

The Productivity Commission concluded that,

- “there are incentives for pay TV companies to use control of content to foreclose competition in the pay TV market;*
- there are incentives for telecommunications companies to use control of pay TV content (through vertical integration or ownership links) to foreclose competition in telecommunications markets;*
- there is limited competition in both the pay TV and telecommunications markets such that a strategy of withholding content could be successful; and*
- exclusive contracts and ownership links between Telstra, Foxtel and some key program suppliers provide the means by which key content can be withheld.”<sup>23</sup>*

In assessing what to do about this the Productivity Commission recommended a wait and see approach however it did recommend more active monitoring and reporting of competition levels. Despite this, the report identified the risks to adopting its approach.

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<sup>20</sup> Productivity Commission (2001). Telecommunications Competition Regulation Inquiry Report. 21 December 2001, page 537. Available from [www.pc.gov.au](http://www.pc.gov.au)

<sup>21</sup> Ibid., page 537.

<sup>22</sup> Ibid., page 533

<sup>23</sup> Ibid., page 538

*"However, there are risks involved in adopting a wait and see option:*

- to the extent that anti-competitive behaviour is occurring and not being adequately addressed by current regulations, a wait and see approach allows this to continue;*
- the industry (particularly the related telecommunications market) is rapidly changing;*
- entry costs are very high, and thus the costs of exiting are very high — if competition is foreclosed, the effect in the telecommunications market, in particular, may be difficult to reverse;*
- and there can be high costs of delay in obtaining access to broadband in regional areas."<sup>24</sup>*

Given the identification that possible effects of failing to act "may be difficult to reverse" it is contradictory to then argue for no changes to regulations to stop the effects occurring.

This submission is primarily concerned with rural and remote home, home-office and farm users with no access to ADSL or cable. However, arguments in favour of opening up pay television programming to providers who want to bundle it with the same Broadband technology apply equally to cable. It is significant that no service provider has offered a bundled package of pay television and Broadband Internet Access via satellite.

**Submission: that the RTI recommends that companies who want to offer a bundled pay television and Broadband Internet package to consumers outside areas cabled by Foxtel or Optus Vision be provided with access to pay television programming from Foxtel and Optus Vision. Such provision to be at rates determined appropriate by the ACCC.**

### **Satisfaction with Telecommunications Services**

The TSI and the ACA Inquiry before it relied on consumer satisfaction surveys to conclude "that reasonable data speeds are generally available over telephone lines."<sup>25</sup> Indeed, the most recent ACA Consumer Satisfaction Survey shows overall residential satisfaction remains high at 88% with non-urban residential usage at 86%. However, when the methodology of the survey is examined it is found that the definition of non-urban is areas with a population less than 10,000 people. True rural and remote areas are not differentiated. Further, the survey size for residential consumers is 829 households. According to the ABS<sup>26</sup>, 24% of Australians live in areas with populations of 9,999 or less, with 18.2% living in areas with populations of less than 3,000. In terms of the ACA survey this means 199 people in non-urban areas were surveyed, of these 33% or 66 people responded that they have an Internet connection. So the statistic that 86% of non-urban consumers are

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<sup>24</sup> Ibid., page 555.

<sup>25</sup> Telecommunications Service Inquiry (2000). page 104.

<sup>26</sup> ABS 2000b, 7.

satisfied with their Internet connection relates to the opinion of 57 people across Australia. This cannot be a definitive result. Also, respondents were not asked if they had dial-up or broadband connection, nor were they asked specifically about satisfaction with the speed of their connection. It is therefore not possible to determine whether non-urban consumers experience poorer outcomes and lower levels of satisfaction in terms of connection speed.

The lack of differentiation between regional and rural or remote users also means that the group most likely to experience problems with their Internet connection, or to be unable to even get a viable dial-up connection cannot be isolated and their responses analysed.

**Submission: that the RTI undertake its own consumer satisfaction survey of regional people and rural people that (amongst other questions) asks about satisfaction in relation to:**

- (i) Internet Access Speeds**
- (ii) Availability of differing Broadband technologies**
- (iii) Cost of Internet connection**

My other comments in relation to possible improvements to telecommunications services are covered in Chapter 4, TOR 6.

## Chapter 2

### INTERNET ACCESS (TOR 3)

Additional Government action that may be taken to remove impediments to the delivery of internet services at 64Kb/s or better and wireless-based technologies in regional, rural and remote Australia.

How important is access to the Internet to you now? And into the future?

What concerns do you have about Internet access in your areas? What do you think about available data speeds, drop-outs or similar problems, and prices?

Are there any impediments to you or people you know 'getting on' line or accessing higher speed Internet services?

Do you have a view on whether higher speed Internet services are reasonably priced and/or reasonably accessible?

#### **Importance of Access to the Internet**

The TSI used the criterion of "common residential needs" as its benchmark for determining appropriate data speeds when it concluded 14.4Kbps was sufficient. The TSI went on to say "Households use the Internet mainly for communication, such as email and web browsing for educational, research and entertainment purposes."<sup>27</sup> It must be questioned as to whether common residential needs have changed since the TSI and to whether that is an appropriate benchmark to use.

People in rural and remote Australia do not have the same sort of access to common services found in metropolitan and larger regional centres. Banks, Government agencies such as Medicare, Investment services, and Tertiary education are typically missing from much of rural Australia.

As a result, the ability of telecommunications services to materially impact on the lives of rural and remote consumers is much greater than that for urban consumers who can easily access those services. It is of interest that the ACA Consumer Satisfaction Survey reported that non-urban Internet users are six times more likely to use Internet banking than their urban counterparts.<sup>28</sup>

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<sup>27</sup> Telecommunications Service Inquiry (2000). page 100.

<sup>28</sup> However, given the small sample size, the result must be treated with some caution. Internet Banking in non-urban areas was reported at 6%, in terms of the survey size this implies 12 people reported that they used the Internet for banking services.

The most recent Internet Usage release from the ABS continues to show regional and rural users lag their city counterparts in take-up of the Internet. The ABS data also shows Internet users in general are more likely to be better educated than the community average and to have higher incomes. Tax Office and ABS data show people in rural and regional Australia are less educated and have lower incomes than those of urban Australians. It would therefore follow that non-urban Australians would be lower users of the Internet.

Due to lower regional and rural incomes pricing of services will be a greater barrier to access than for city consumers. In terms of Broadband, rather than general Internet access, pricing is a concern. Microsoft, in its submission to the BAG Enquiry made particularly pertinent comments in relation to Broadband pricing and accessibility:

**Price**

*At around \$50-100 per month for broadband plus excess usage charges, many Australians find broadband services too expensive or rates too complex. Pricing models that set low limits on the amount of material customers can download before extra charges apply are unpopular with customers and the Internet industry. This is understandable particularly when there are issues about the stability of the service and the lag between applications.*

**Accessibility**

*In theory, almost all Australians can access broadband services through cable, xDSL or satellite but in practice many find it difficult to obtain. Key problems are the high cost of satellite services and that current cable and xDSL networks are highly concentrated in business and urban areas.<sup>29</sup>*

So while there is a lower usage of the Internet in regional and rural Australia it is explainable by looking at income levels, pricing levels and access. Lower usage of the Internet, and particularly Broadband Internet in rural and regional areas should not be mis-interpreted as a lack of interest in these services. It is also likely that those in regional and rural Australian who use the Internet place more importance on it than urban Australians who have broader choices in accessing information, banking, government payments and education.

**Broadband**

Various definitions of broadband exist.

The FCC defines broadband "as a descriptive term for evolving digital technologies that provide consumers a signal switched facility offering integrated access to voice, high-speed data service, video-demand services, and interactive delivery services." It further notes, "There are several types of broadband services:

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<sup>29</sup> Microsoft (2002), BAG Enquiry Submission, August 2002, page 9.

- Digital Subscriber Line (DSL)
- Cable Modem
- Wireless Internet
- Satellite<sup>30</sup>

The FCC regards Broadband as speeds above 200Kbps.

Another definition, from Professor Robert Harris in a submission to the FCC on behalf of BellSouth Corporation said "broadband access should be defined in these terms: .any network or technology that is built or modified to carry digital data traffic and provide end users with always-on access to one or more data networks... As a practical matter, this definition of broadband implies access speeds equal to or greater than 256 kbps downstream, the minimum speed for most cable modem and DSL users."<sup>31</sup>

The Broadband Advisory Group (BAG) has not reached consensus on the definition of Broadband, however "there was some agreement that **'broadband' meant data transmission speeds of at least 200 kilobits per second** or higher – as typically achieved by home ADSL and cable modem users. Others said that until connections reached approximately 10 megabits per second and were 'always on' the true benefits of 'broadband' such as high quality video transmission did not become apparent, (emphasis added)."<sup>32</sup>

Quite simply, 64 Kbps is too slow to be regarded as Broadband Internet access.

Telstra offers three broadband technologies, cable, ADSL and satellite. As noted above in Chapter 3, Telstra does not regard ISDN as a broadband technology.

**Submission: that the RTI define Narrowband speed as up to 56Kbps and Broadband speed as above 200Kbps.**

### ADSL

One suggestion<sup>33</sup> to assist potential ADSL users, particularly those outside metropolitan centres waiting for news of ADSL roll-out, is for the ACA or other suitable body, to establish an interactive website that allows potential ADSL subscribers to determine the cost to get their exchange ADSL enabled and how many subscribers, both in total number and as a percentage of that exchange's active lines, would need to sign up for ADSL for the exchange to be viably enabled. As Paul Cooper says in his submission this "recommendation is based on the model adopted by the community bank

<sup>30</sup> [www.fcc.gov/glossary.html](http://www.fcc.gov/glossary.html)

<sup>31</sup> [www.fcc.gov/transaction/att-comcast/bellsouth\\_exhibit1.pdf](http://www.fcc.gov/transaction/att-comcast/bellsouth_exhibit1.pdf)

<sup>32</sup> BAG (2002). Page 12.

<sup>33</sup> Paul Cooper originally made this suggestion in his submission to the BAG Enquiry, August 2002, page 4.

when establishing this facility into local communities where banking services have been withdrawn or were never available.”<sup>34</sup>

If such a facility were established it would also become clear which are the exchanges where it will never be viable to upgrade them to ADSL and this may allow governments to make subsidy decisions based on the proven inability of people on certain exchanges to never receive ADSL even if they live within the physical limitations of the technology.

**Submission: that the TRI recommends the establishment of a ADSL viability tool to enable potential consumers and communities to determine if they will ever be able to get ADSL enabled at their exchange.**

### Installation

For regional and rural residents outside major regional centres the only Broadband service available is satellite. Due to misguided concentration on ISDN many rural and regional people are faced with prohibitive installation costs if they require a Broadband connection. This is because of the restriction of the satellite installation subsidy to connections further than 6km from an ISDN capable exchange. Through the DDSO Telstra has upgraded all its exchanges to be ISDN capable. Anybody who lives within 6km of a Telstra exchange but has no ADSL or cable available is forced to pay the full installation costs.

The ACA website highlights the problem for people in rural and regional areas with an ISDN capable exchange.

*At least ninety-six per cent of Australians are eligible for the GDDS. The following table sets out the eligible areas for this service:*

GDDS Area	Type of Area
Metropolitan	Within a four-kilometre radius of an ISDN capable telephone exchange
Country	Within a six-kilometre radius of an ISDN capable telephone exchange

*(If your connection uses subscriber line conditioning equipment or a pair gain system, you are not considered to be in a GDDS area. However, you are eligible for the SDDS.)*

*The SDDS, on other hand, is provided on request to the remaining four per cent of the Australian population who are outside a GDDS area.*

*To find out if you are in a GDDS or SDDS area, visit Telstra’s website at: [www.telstra.com.au/onramp/avail.htm](http://www.telstra.com.au/onramp/avail.htm), enter your phone number and follow the instructions.*<sup>35</sup>

<sup>34</sup> Cooper, Paul, submission to the BAG Enquiry, August 2002, page 4



Approximately 97% of the total Australian population is within 6km of an exchange so the subsidy now only applies to 3% of the population. To put it another way, 24% of Australians live in areas with populations of less than 10,000. These Australians are the ones with little or no likelihood of ADSL or Cable being rolled out and so must rely on satellite. Only 12.5% of these people are eligible for the DDSO satellite subsidy. The rest get no subsidy yet will not get cable or ADSL due to the infrastructure costs of providing it and technical limitations that restrict ADSL to within 4.5km of an exchange<sup>36</sup>.

It is difficult to devise policy that assists those people for whom satellite is the only option for the foreseeable future without inhibiting the rollout of ADSL and cable to other regional areas. However the current DDSO regime is not helping those it was designed to assist. For the 21% of the Australian population who live in small towns or rural areas but are within 6km of an exchange they either pay the full cost of satellite installation, or they pay up to double the cost of satellite monthly charges to receive the inferior 64 Kbps ISDN service.

Table 4 compares various satellite connection costs with those of ADSL and cable. It is clear that there is a substantial price barrier for anyone unfortunate enough to live within 6km of an exchange and have no other broadband options. For most Victorians and Tasmanians the size of their State and the density of their towns, means they are unable to access the satellite installation subsidy<sup>37</sup>.

Product	Installation Cost
Telstra 2-way Satellite	\$1,198
Origin 1-way Satellite	\$850
Telstra 2-way Satellite	\$653
Hotkey 1-way Satellite	\$650
Ruralnet 1-way Satellite	*\$645
Hotkey ADSL	\$498
Optus Cable	\$429
OzEDSL ADSL	\$250
Telstra ADSL	\$249
Telstra Cable	\$189
Neighborhood Cable	\$99

\* Ruralnet also charges \$2.57 per km for installations more than 30km from its nearest service centre

**Table 4 Broadband Installation Costs**

<sup>35</sup> [www.aca.gov.au/consumer/fsheets](http://www.aca.gov.au/consumer/fsheets)

<sup>36</sup> Telstra states in its FAQ for ADSL that; "The availability of ISDN in a particular premise will depend on its distance from the exchange. ISDN 2 & ISDN Home services have a distance limitation of approximately 4.5 km from the local exchange."  
[www.telstra.com.au/onramp/chckin\\_minisq.cfm](http://www.telstra.com.au/onramp/chckin_minisq.cfm)

<sup>37</sup> The current extended zone list shows there are no Victorian or Tasmanian regions included. [telstra.com/countrywide](http://telstra.com/countrywide)

Chapter 4 (TOR 6) proposes various alterations to current policy to more equitably address access to Broadband going forward.

### Ongoing Access

Monthly Broadband access charges in Australia vary considerably. Table 5 compares low usage Broadband plans available in Victoria and Table 6 compares medium usage plans. Satellite services available in at least part of rural Victoria are highlighted in bold. From the table it is apparent that competition across technologies is having a positive impact on pricing except on 2-way satellite. Overseas experience, particularly in the US, indicates this will continue. However, monthly pricing remains expensive, especially when usage charges for additional downloads are included.

It is of interest that Telstra does not offer any satellite plans based on a 256 Kbps speed but it does offer that speed through ADSL and cable to metropolitan users. The DDSO has resulted in Telstra offering a poorer plan to satellite users.

In the context of Telstra as the USO provider and also debate about the impact of a potential sale of the remaining 51% currently owned by the Government, it is interesting that Telstra is comparatively expensive. As the dominant telecommunications provider it is exhibiting classic incumbent behaviour of charging high prices while it still has a dominant market share. If the experience in long distance telephony is any guide, Telstra will continue to charge high prices until it has lost significant market share then it will come down to meet the market price.

Product	Download Speed Kbps	Cost per Month	Cost/ Speed
<b>Telstra 2-way Satellite</b>	<b>256</b>	<b>\$145.00</b>	<b>\$0.57</b>
<b>Telstra 2-way Satellite</b>	<b>64</b>	<b>\$120.00</b>	<b>\$1.88</b>
Hotkey ADSL	256	\$82.95	\$0.32
Origin 1-way Satellite	256	\$82.50	\$0.32
Telstra ADSL	256	\$76.45	\$0.30
<b>Ruralnet 1-way Satellite</b>	<b>256</b>	<b>\$72.90</b>	<b>\$0.28</b>
Optus Cable	256	\$64.95	\$0.25
<b>Telstra 1-way Satellite</b>	<b>64</b>	<b>\$60.00</b>	<b>\$0.94</b>
OzEdsl ADSL	256	\$59.95	\$0.23
Telstra Cable	256	\$54.95	\$0.21
<b>Hotkey 1-way Satellite</b>	<b>256</b>	<b>\$44.95</b>	<b>\$0.18</b>
Neighborhood Cable	256	\$34.95	\$0.14

1-way Satellite includes a dial-up connection from the same service provider to provide the upload link. Hotkey Satellite advises its plan includes the dial-up connection if its price.

**Table 5 Broadband Plans with up to 500MB Monthly Download Limit**

Product	Download Speed Kbps	Cost per Month	Cost/Speed
<b>Telstra 2-way Satellite</b>	<b>512</b>	<b>\$450.00</b>	<b>\$0.88</b>
Telstra ADSL	512	\$111.45	\$0.22
OzEdsl ADSL	512	\$99.95	\$0.20
Datafast ADSL	512	\$99.00	\$0.19
Origin 1-way Satellite	400	\$97.90	\$0.24
<b>Telstra 1-way Satellite</b>	<b>400</b>	<b>\$92.95</b>	<b>\$0.23</b>
Datafast 1-way Satellite	300	\$89.95	\$0.30
<b>Ruralnet 1-way Satellite</b>	<b>400</b>	<b>\$89.95</b>	<b>\$0.22</b>
Telstra Cable	400	\$87.95	\$0.22
<b>Hotkey 1-way Satellite</b>	<b>400</b>	<b>\$79.95</b>	<b>\$0.20</b>
Optus Cable	400	\$79.95	\$0.20
Neighborhood Cable	400	\$74.95	\$0.19

**Table 6 Broadband Plans with 2 GB – 4GB Monthly Download Limit**



## Chapter 3

### LEGISLATED SAFEGUARDS (TOR 4)

4. The current provision of legislated consumer safeguards including the Universal Service Obligation, the Customer Service Guarantee, untimed local calls and the Telecommunications Industry Ombudsman and whether further action is required to ensure these safeguards are enforced into the future.

How well do you think current legislated safeguards like the Universal Service Obligation (USO), Customer Service Guarantee (CSG) and Telecommunications Industry Ombudsman (TIO) are protecting the interests of consumers in regional Australia?

Are regulators (particularly the Australian Communications Authority and the Australian Competition and Consumer Commission) able to adequately protect consumers' interests under current arrangements?

#### Effectiveness of the USO

As this submission is only about data my comments will be restricted to the DDSO part of the USO.

If we look back in time, telecommunications services were bundled with postage services as part of the old Post Master General (PMG). The same principle that allows us to send a standard letter anywhere in Australia for the cost of a single stamp underpins the argument that all Australians should have access to standard telecommunications services. However, as a society we have never cross-subsidised telecommunications to the same extent as postage. Had we done so there would be local call charges applying to calls anywhere in Australia. Given that technological improvements have made the cost of distance largely irrelevant for telephony it could be argued that we made the wrong choice and should have cross-subsidised local call charges rather than postage. Such an argument is outside the scope of this submission.

Our society has, however, agreed that access to standard telecommunications services is the same sort of right as access to standard rate postage. For this reason the USO, CSG and TIO exist. It is the role of the Government to create and maintain the regime that delivers this access to all Australians. Good public policy distributes benefits in an open and accountable manner. In this case, that means that the cost of providing access to people who would not receive it on purely commercial terms, is clearly identifiable.

The current government has chosen the path of contestability for the USO. This meets the open and accountable tests although it is not the only way in

which those tests could be met. Often in the debate about the USO, participants confuse the provider of the USO with the USO itself. This is particularly the case where only one service provider, Telstra, has traditionally provided all telecommunications services. Contestability of the USO correctly emphasises the services, not the telecommunications company, as the reason for having a USO.

Where the public service is not the provider of services, the existence of clear, definitive and measurable service requirements is a key function of government.

The ACA website states:

*The universal service regime was widened in July 1999 with the addition of the digital data service obligation to the existing universal service obligation.*

*The digital data service obligation is the obligation to ensure that either:*

- (i) general digital data services; or*
- (ii) special digital data services; are reasonably accessible to all people in Australia on an equitable basis, no matter where they live or conduct business.<sup>38</sup>*

In the USO section of its website the ACA goes on to say:

*"The DDSO is the obligation placed on a digital data service provider to ensure that digital data services are accessible to all people in Australia on an equitable basis, wherever they reside or carry on business.*

*Universal service providers (USPs) and digital data service providers (DDSPs) are subsidised for providing the USO and DDSO. Telstra is currently the sole universal service provider and is also a DDSP. Additional universal service providers may be declared in the future. Hotkey Internet Services was approved as a special digital service provider on 22 May 2002. The Minister must determine the amount of subsidy that USPs are entitled to on the basis of advice from the ACA. These determinations may be made up to three years in advance. In addition, DDSPs submit claims for costs incurred in providing the DDSO.*

*The USO subsidy and DDSO costs are funded by the telecommunications industry, currently this includes all licensed telecommunications carriers."*

The DDSO does not cover prices and is defined as a minimum of 64Kbps via either ISDN or Satellite. In fulfilment of the DDSO Telstra offers three plans, ISDN Home, 1-way satellite and 2-way satellite.

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<sup>38</sup> [www.aca.gov.au/consumer/uso](http://www.aca.gov.au/consumer/uso)

In its submission this year to the Productivity Commission, Telstra noted the lack of interest in ISDN.

*The fact that Telstra has high market share for [ISDN services] simply reflects Telstra's early build of its ISDN network (1987) and that broadband technology has since moved on so there is no market interest in providing ISDN services (sub. 42, p. 6).<sup>39</sup>*

### Pricing of DDSO Services

Chapter 2 argues that 64 Kbps is not broadband access and is therefore not fast enough to qualify as high speed Internet access. At this point I wish to concentrate on the pricing of the DDSO services.

Product	Speed Down/Up K(bits)ps	Cost Per Month	Cost per Kbps for 300 MB
2-way satellite	64/64	\$120.00	\$1.88
1 way satellite	64/19.2	\$60.00	\$0.94
ISDN	64/64	\$37.40 connection	\$1.11 <sup>40</sup>
Countrywide		\$24.95 ISP charge (Bigpond) \$9.00 call charges (30 hours) \$71.35 total per month	

**Table 7 General DDSO Services**

Product	Speed Down/Up K(bits)ps	Cost Per Month	Cost per Kbps for 300 MB
Cable	256/128*	\$54.95	\$0.21
ADSL	256/64	\$76.45	\$0.30

\* Theoretically unlimited, 256 – 450Kbps in practice

**Table 8 Telstra Broadband Services**

Table 7 compares the cost of the various DDSO services whereas Table 8 compares the cost of Telstra Broadband services with similar data caps. To compare the plans, the cost per Kbps to download 300MB was calculated. All of the DDSO services are significantly more expensive on a cost per speed basis than ordinary Telstra broadband services available in urban areas. Of interest, if the same comparison is made between Bigpond Dial-up at 19.2 Kbps the two-way satellite is still more expensive (\$1.88 compared to \$1.75) although it is cheaper than the other two DDSO services. If however, a consumer can get 36 Kbps or better through their modem then all of the DDSO services are more expensive.

The cost of DDSO services compared to other satellite services demonstrates the distortion created by the DDSO.

<sup>39</sup> Productivity Commission (2001). Page 140.

<sup>40</sup> <http://203.55.155.29/blue/telstra/index.html> for details of pricing

Product	Download Speed Kbps	Cost per Month	Cost/ Speed
<b>Telstra 2-way Satellite</b>	<b>64</b>	<b>\$120.00</b>	<b>\$1.88</b>
<b>Telstra ISDN Countrywide</b>	<b>64</b>	<b>\$71.35</b>	<b>\$1.11</b>
<b>Telstra 1-way Satellite</b>	<b>64</b>	<b>\$60.00</b>	<b>\$0.94</b>
Telstra 2-way Satellite	512	\$450.00	\$0.88
Telstra 2-way Satellite	256	\$145.00	\$0.57
Origin 1-way Satellite	256	\$82.50	\$0.32
Datafast 1-way Satellite	300	\$89.95	\$0.30
Ruralnet 1-way Satellite	256	\$72.90	\$0.28
Origin 1-way Satellite	400	\$97.90	\$0.24
Telstra 1-way Satellite	400	\$92.95	\$0.23
Ruralnet 1-way Satellite	400	\$89.95	\$0.22
Hotkey 1-way Satellite	400	\$79.95	\$0.20
Hotkey 1-way Satellite	256	\$44.95	\$0.18

1-way Satellite includes a dial-up connection from the same service provider to provide the upload link. Hotkey Satellite advises its plan includes the dial-up connection if its price.

**Table 9 Satellite Plans with DDSO plans in Bold**

On a cost per download speed basis the DDSO services compare badly. The DDSO services are also expensive on a \$ per month basis for a service that is 4 times slower than the slowest non-DDSO satellite services. On both a speed and cost basis specifying 64 Kbps as the DDSO speed has not had the desired effect of improving access to high-speed data services. Even Telstra concedes ISDN is not a current technology<sup>41</sup>. Money spent on the delivery of DDSO services has therefore not been effective in assisting the delivery of data services to regional, rural and remote areas.

Product	Speed Down/Up K(bits)ps	Cost Per Month	Cost per Download Speed
2-way satellite	33.6/33.6	\$16.95	\$0.50
2-way satellite	64/64	\$44.00	\$0.69
2-way satellite	400/64	\$60.50	\$0.15

**Table 10 Extended Zone DDSO Services**

Table 10 lists the pricing for extended-zone DDSO services according to the ACA<sup>42</sup> as at November 2001. However, I can find no reference to any special DDSO plans for extended call zones currently on the Telstra web site. It appears these prices were only available for six weeks and only applied to targeted people in extended zones. As noted above this excludes most people in rural and regional Australia

Any telecommunications regulatory regime suffers from the constraints of being able to regulate within a rapidly evolving technological environment. The DDSO is a good example of this as its starting point was to mandate ISDN to every exchange and then to add on satellite for other areas. This has

<sup>41</sup> [www.aca.gov.au/consumer/fsheets](http://www.aca.gov.au/consumer/fsheets)

<sup>42</sup> [www.aca.gov.au/consumer/fsheets/](http://www.aca.gov.au/consumer/fsheets/)



created multiple problems, not least of which was that Telstra was the only provider capable of offering ISDN so it precluded any competition in the delivery of services. This has resulted in the pricing structure we now see for DDSO services.

A possible solution would be to change the DDSO mandated speed to, for example 200 Kbps, a currently available broadband speed. But there are a number of problems with such a suggestion.

1. The demand for broadband access is not yet at the point where it can be regarded as a universal requirement. Funding universal access is therefore a misallocation of resources.
2. 64 Kbps sounded like a very high speed four years ago. Today Broadband users are increasingly demanding a minimum of 400 Kbps. We have no way of knowing what speeds will be available and accepted as ordinary in four years time. By its nature, regulations will always lag technology. Mandating a specific speed will lead to misallocations of resources as service providers maximize subsidies available for that speed.
3. Just as ADSL was an idea in a Bell lab four years ago, Broadband Wireless is still in its infancy today. It may be that for users within mobile coverage areas but outside cable and ADSL areas that Broadband Wireless will provide the most cost effective solution for Broadband data access. Nobody knows. To mandate a specific technology hinders the development of new technologies.

However if Broadband is outside the DDSO that means the current subsidy for satellite installation for remote users would be discontinued. Given the high cost of satellite installation for the approximately 3% of the population effected, this would be a significant increase in cost. Chapter 4 makes some suggestions about possible groups who would benefit from specific assistance.

**Submission: that the DDSO be limited to minimum Narrowband speeds.**

**Submission: That a new DDSO of 19.2 Kbps should be legislated as the minimum acceptable Narrowband data access speed, this DDSO to be contestable.**

**Submission: that for now Broadband access speeds be outside the DDSO and be addressed via assistance to specific types of users rather than by USO regulation. The TRI should recommend a test for the inclusion of Broadband in the DDSO in the future.**

### **Access to Regulations**

One of the reasons for this inquiry and the TSI before it is a perception in that rural and regional Australians have poorer access to telecommunications services than metropolitan consumers. Without commenting on the validity or otherwise of that perception, it is nevertheless true that the perception continues to exist.

The regulatory bodies collect a vast amount of statistical and other information about the performance and extent of telecommunications services throughout Australia. There are various mandatory reporting regulations that apply to the ACCC, TIO and ACA, some of which cover specific topics of interest to rural and regional Australians. However, unlike Telstra, which now groups most regional and rural material under Country Wide, the regulators have no equivalent mindset. The ACCC is interested in uncompetitive behaviour and breaches of XIB and XIC of the Trade Practices Act, while the ACA tends to divide by its various pieces of legislation.<sup>43</sup>

There is no entry point at the ACA, TIO or ACCC for information for regional and rural telecommunications users. The ACA has a section of its website that provides a great deal of information about the USO. (<http://www.aca.gov.au/consumer/uso/>) but this only covers the USO, not the CSG or rural and remote mobile phone issues. The TIO describes its jurisdiction and ACCC notes that billing disputes belong with the TIO. However, it is not clear where, for example, one would lodge a complaint about a failure of USO delivery or where one could find a comprehensive description of the regulatory regime as it applies to rural and regional Australians.

**Submission: that the TRI recommends that the Minister direct the ACA to pay specific regard to the state of regional and rural telecommunications in Australia when it discharges Section 6 (g) of the Australian Communications Authority Act 1997. That section allows the ACA “to make available to the public information about matters relating to the telecommunications industry.”**

**Submission: that the TRI recommends that the ACCC be directed to pay specific regard to the level of competition and pricing for telecommunications services when it reports to the Minister under Division 12 Part XIB of the Trade Practices Act 1974. That division requires that the Commission must “monitor and report each financial year to the Minister on prices paid by consumers for telecommunications services.”**

## Effectiveness of Regulations

### ADSL

The ACCC recently (30 August 2002) declared line sharing. This has important effects for the expansion of Broadband services throughout Australia. As the ACCC said in its press release:

*“The decision means Telstra must allow other service providers access to the high-speed data capacity of its copper network on commercial terms. The ACCC will have jurisdiction to arbitrate if parties are unable to reach agreement on the terms of access.”<sup>44</sup>*

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<sup>43</sup> To illustrate the complexity faced by the ACA, the ACA lists 16 applicable pieces of legislation.

<sup>44</sup> ACCC (2002). ACCC Declares Line Sharing. 30 August 2002. Available from [www.accc.gov.au/](http://www.accc.gov.au/)

For people within 3.5km of a telephone exchange who have lines capable of carrying ADSL this will mean new service providers will have guaranteed access to Telstra's telephone lines for this purpose. It is an important development for regional and metropolitan telecommunications users. However, because it forces Telstra to allow competitors access to its copper network it may have the effect of reducing Telstra's future investment in its copper network. For ADSL to work it needs high quality copper lines, this is particularly true when it is installed at the distance limit of current technology. Telstra submitted to the TSI that 96% of the population has a telephone line within 4.5km of an exchange.

One of the barriers erected by Telstra to stop other service providers from offering ADSL has been through line testing. Telstra only offers ADSL to customers capable of receiving 1.5Mbps on their copper lines even if the customer signs up for a lower speed plan. This is bad enough. However, Telstra is also requiring lines to meet the 1.5Mbps standard when the customer is planning to sign-up with another service provider even if the other service provider only offers slower speed plans. This has important anti-competitive effects which are particularly applicable to regional Australia which Telstra admits has poorer quality lines on average. The ACCC needs to be able to stop this practice so that regional ADSL providers can actually get access to customers.

**Submission: that the RTI recommends that the ACCC inquire into the possible anti-competitive effects of Telstra requiring copper lines to be able to carry 1.5Mbps speeds when the customer is signing up for a slower speed service.**



## Chapter 4

### SHARING IN FUTURE TELECOMMUNICATIONS BENEFITS (TOR 6)

6. The most effective means by which the Government can ensure that people in regional, rural and remote Australia can share reasonably equitably - in terms of availability and cost - with residents in metropolitan Australia in the benefits of future advances in telecommunications services resulting from competition and new technologies.

What further steps could the Government take to enable future telecommunications services in regional Australia to be provided 'reasonably equitably' with those in metropolitan Australia?

Should there a regular review process about regional service levels and initiatives, aimed at maintaining reasonable equity with metropolitan Australia? If so, how should it work?

How should it be decided in the future when and what action should be taken to make particular services widely available in regional Australia?

Should the provision of new and emerging telecommunications be subsidised? If subsidisation would facilitate the provision of some services in regional Australia, how should those subsidies be funded and allocated?

#### Further Steps Towards Equity

##### Tertiary Education

On average, higher educational attainment results in higher incomes. The relative lower education levels of rural and regional people are a contributing factor to the lower incomes found in rural and regional Australians. It is also true that access to higher education is more limited in regional and rural Australia. Most tertiary students are forced to move to a capital city or major regional centre to undertake a degree. Distance education is the primary way by which students can remain in their communities while studying.

A brief survey<sup>45</sup> of US distance education university courses showed that a minimum actual connection speed of 33.6Kbps is required. The majority of courses require broadband access of 240Kbps or faster to allow for video streaming. Internet based distance education is still in its infancy in Australia however additional courses are offered every year.

Alex Reid, IT Policy Officer of the University of WA (UWA), in his submission to the Broadband Advisory Group Enquiry (BAG) addressed many of the issues

<sup>45</sup> <http://www.google.com/> search using search terms "distance education technology requirements"

surrounding Web delivery of higher education. He noted that UWA has "about 60% of its courses with some web presence, though few units with substantial web content as yet."<sup>46</sup>

In discussing the web content, Mr Reid articulated the need for Broadband speed:

*"It should be noted that this on-line course content will go well beyond merely placing lecture notes on-line, or other "page-turning" or text-only approaches to on-line learning; it will increasingly involve substantial (live) interactions with the content, with lecturers/tutors and with other students; and content which contains a rich mixture of various media; **this will increasingly require broadband access to access it at acceptable speeds - as indicated above, this will need to be from students' homes.**"(emphasis added)<sup>47</sup>*

The Australian Information and Communications Technology in Education Committee (AICTEC) made a detailed submission to the BAG Enquiry about the use and provision of bandwidth to the educational sector. AICTEC concluded that "The cost of access is a constraint to more extensive and higher bandwidth Internet connectivity for education and training institutions, particularly those in non-metropolitan areas."<sup>48</sup>

**Submission: That the TRI recommend that the Federal Government subsidise tertiary students in rural and remote areas who are studying full-time via distance education. The subsidy should include all installation costs and the cost differential between dial-up and Broadband monthly charges of the cheapest available of cable, ADSL, satellite or new Broadband technologies.**

### Banking

Internet Banking, with the availability to transfer funds, pay bills and check account balances can replace many branch based services. For areas with no branch network this service is not merely convenient, it is vital. However, due to the size and complexity of bank web sites, for users on the minimum 19.2 Kbps connection, using Internet Banking is either very slow or not possible due to time-outs from the bank server.

Banks are one of the major users of data transfer networks. In the past these were primarily private facilities based networks although since the cost of wholesale data transfer has fallen so dramatically in recent years most banks now use one of the major telecommunications companies as their data carrier. The way in which they transfer data is optimised for speed. It does not include graphics or a user interface. For their retail customers, Australian banks have chosen to implement Internet Banking within a web browser to provide the graphics rather than to have customers install a program that can read a raw data flow and then display it.

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<sup>46</sup> Reid, A, submission to the Broadband Advisory Group Enquiry, 12 August 2002.

<sup>47</sup> Ibid.

<sup>48</sup> AICTEC, BAG Enquiry submission, page 16.

By contrast, the ATO has implemented electronic lodgement by creating a pc program that manipulates the data on screen with a connection that just sends the actual data to the ATO over the Internet. Even the slowest Internet connection can handle receiving and sending the data. The pc program is available by download or via CD.

Banks enjoy a privileged position in Australia due to their access to the RBA payments system. They have many licence conditions that they currently must adhere to.

**Submission: that the TRI recommend that as a condition of their licence retail banks be required to offer an Internet banking service capable of running effectively on a 19.2 Kbps modem connection.**

### Healthcare

*"Ms Ros Hill, Senior Telehealth Consultant with the Department of Health and Human Services in Tasmania, and a BAG Member, also outlined productivity gains being realised through the use of telehealth applications. Among the benefits of being able to link doctors with patients or other medical professionals was reduced travel times and improved access to expertise. In one example, a baby in remote Western Australia received six videoconference consultations, saving six flights to Perth worth \$8,000 and what would have been 12 lost working days for the parents. Therefore, the productivity gains are not limited to the health sector but realised across the economy."<sup>49</sup>*

Microsoft Australia, in its submission to the BAG Enquiry also addressed healthcare and its interaction with telecommunications. Microsoft describes Tele-Health and its data needs better than I can and I include part of their submission as an example of another set of services vital to regional and rural people that are dependent on Broadband being available.

*"Tele-health involves the use of information and communications technology to deliver health care, health education and health information over large and small distances. There are many subsets of tele-health such as tele-medicine, tele-radiology, tele-consultation, tele-homecare and so on.*

*For e-health to work effectively, caregivers located at urban, rural or remote sites must be reliably linked with connections capable of allowing the human interactions required for treatment. The transmission of visual material such as X-ray images, CAT-scan results, MRI scans and ultrasound images typically require very high-speed connections and the infrastructure to support such connections.*

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<sup>49</sup> BAG (2002), Page 4.

*An extensive broadband network is needed if nations want improved access to health information and increased quality of care. The real gains will come with advent of new tele-homecare applications using broadband to allow "always on", jitter-free examination, continuous patient monitoring and advanced assessments via video conferencing.*<sup>50</sup>

**Submission: that the RTI recommend that a new Tele-Health program be developed and funded by the Federal Government. This program to fully subsidise Broadband access to rural health practitioners and to rural patients who are assessed by their doctor as suitable for Tele-homecare.**

### **Future Review Process**

In preparing this submission, every time I thought I had found every recent applicable review, another one would crop up. There is clearly no current shortage of telecommunications reviews and the current Government has demonstrated a commitment to consultation.

In a post T3 environment it is important that all Australians have continuing access to reliable, current data about telecommunications service delivery. Consumers should be able to find out what the minimum and average cost of various telecommunications services are in each capital city and each State so they can compare the cost with local providers. Accurate coverage maps of mobile phone coverage, local call zones, availability of cable and ADSL, should be available in one place, with providers required to update them monthly. Telstra as the owner of the only PSTN should have additional reporting requirements in relation to the state of the PSTN. The Parliament should enquire bi-annually as to what data is required to be provided by the service providers and the various Government regulators and data collection agencies. The data can then be presented in a central point, e.g. the New Connections website <http://www.newconnections.gov.au>.

The provision of data, as well as an index of any other relevant reports, will allow consumers, community groups, researchers and other interested parties to decide for themselves if regional and rural telecommunications services are adequate and comparable to those available in metropolitan areas.

**Submission: that the Parliament be required to enquire bi-annually as to what data is required to be collected regularly so consumers and other interested parties can assess for themselves the adequacy of regional and rural telecommunications services.**

### **Future Subsidies**

By rural and remote users I mean the 24% of the population who live in areas with less than 10,000 people. These are the people least likely to receive Broadband services via ADSL or cable. However, in the future the majority of these people may be able to get Broadband Wireless as well as the current

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<sup>50</sup> Microsoft, BAG Enquiry Submission, August 2002, page 7.



option of satellite. The problem for these users is not availability of Broadband it is the cost of installation an ongoing access.

There is the temptation to recommend offering all of these people subsidised satellite installation. However, the equity problems that raises are significant as many city people can only get satellite and anyway many of these people would not choose to spend a cheque from the Government on satellite installation if given the option. In addition, that locks all of rural and remote Australia into satellite technology, which is undesirable as new technologies, not yet available, may be a better alternative in the future.

However, leaving regional, remote and rural users without a guarantee they will have equitable access to Broadband when people in metropolitan centres have it is unacceptable. Throughout this submission I have argued that subsidies for Broadband should be provided now to specific groups such as distance tertiary students and rural healthcare providers. There will no doubt be other specific groups, such as farmers, for whom the provision of a subsidy now will allow them to create economic benefits for society. There is also a role for the RTI to define at what point more general subsidies for Broadband to regional and rural areas should be implemented.

## Chapter 5

### OTHER MATTERS

What other issues would you like to raise or comments would you like to make in regard to the terms of reference?

#### **Sale of the Remaining 51% of Telstra**

This submission has sought to demonstrate that Internet services, particularly Broadband are vital for regional and rural Australians. Further, it has analysed the current provision of these services and concluded that substantial barriers to access remain for some groups of rural and regional Australians. Some methods to redress these barriers have been suggested. The submission holds that current regulation has in some respects been misguided and has not delivered advances in technology equitably.

All of this analysis has been within the current ownership structure of Telstra. Yet it is not apparent that current Government ownership has had any effect on the provision of the services covered in this submission. For example the Government has not directed Telstra to make pay-television programming available despite consistent advice that the current duopoly is limiting regional cable roll-out.

The Government has repeatedly stated that neither the current Liberal/National Government nor the previous Labor Government have directed Telstra's management for many years. In fact, the current ownership structure restricts the Government's ability to effectively regulate. On the one side it has the budgetary implications of regulation cutting the dividend it receives but on the other side is its role as the impartial regulator, who is meant to regulate on behalf of the citizens of Australia.

Where there is market failure and certain groups in society are disadvantaged due to the thinness of the market they form a part of, then the appropriate Government response is regulation and in some cases subsidy.

For these reasons I believe it is important that the RTI concentrate on overall provision of telecommunications, not just Telstra's performance. On one reading of the terms of reference it would be possible to argue that because the DDSO has been met, there is a pass mark on data services. Yet the DDSO is inadequate for current data needs. Similarly the IAP is now inadequate for normal web browsing, yet Telstra cannot be criticised for meeting the terms of the IAP.

If Telstra is to be fully privatised, this is the last opportunity for rural and regional people to "future-proof" telecommunications services. Why? Because part of the proceeds from the sale can be used to achieve this. At

no other point will there be such a large amount of money available that has a direct relationship to telecommunications.

I support new and better regulation and assistance to bridge the gaps between metropolitan and regional and rural telecommunications services. I also support the sale of Telstra with part of the proceeds used to fund this assistance.



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