The Senate

Environment, Communications, Information Technology and the Arts References Committee

The Australian telecommunications network

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Recommendations

Recommendation 1

The Government should publicly confirm its acknowledgement that the existing copper fixed line network is becoming increasingly obsolete. Government policy should focus on the objective of having this network replaced with a fixed line network based on fibre to the home technology, or alternative technologies offering similar capacity, over the next decade (para. 7.15).

Recommendation 2

In recognition of the importance of data services to all Australians the Government should require Telstra to remove from its network as soon as practicable all pair gain systems which do not support broadband services or which restrict dial-up connection speeds (para. 7.25).

Recommendation 3

While acknowledging the interim nature of dial-up Internet services, the Committee recommends that the Government should place a licence condition on all carriers providing voice telephony services requiring that their networks support a minimum speed for dial up services. That speed should be progressively increased over the next two years to at least 40 kbps (para. 7.26).

Recommendation 4

Consumers should have a legislated right to access, on demand, to information about whether their services are provided via a pair gain system, and about the full range of services which can be supported to their address (para. 7.27).

Recommendation 5

The Government should place a licence condition on the Universal Service Provider specifying that a broadband service providing a minimum data connection speed be made available to all Australians within twelve months (para. 7.28).

Recommendation 6

The dial up and broadband speeds specified above should be reviewed and updated every 12 months to ensure that they remain contemporary to the needs of users. The specified speeds should be based on the capacity of telecommunications networks operating at international best practice standards, not on current services offered by Telstra or by other carriers, or the existing capabilities of the Telstra network (para. 7.29).

Recommendation 7

The Universal Service Obligation should be revised to incorporate a guarantee that customers will always be able to obtain a dial tone (para. 7.38).

Recommendation 8

The Universal Service Obligation should be revised to incorporate a guarantee that dial-up Internet connections will not drop out (para. 7.39).

Recommendation 9

The Government should require the Australian Communications Authority (ACA) to conduct an independent inquiry into the state of repair of Telstra's customer access network and the Government should, if necessary, use its powers to direct Telstra to bring the network up to an acceptable operational standard. As a part of the inquiry the ACA should examine technical standards and regulations, including those relating to preventing the ingress of water into CAN cables, and amend those standards and regulations so as to protect the physical integrity and ensure adequate maintenance of the customer access network (para. 7.40).

Recommendation 10

The role and powers of the Australian Communications Authority (ACA) should be urgently reviewed and enhanced so that it can effectively and proactively regulate the Australian telecommunications network. In particular the ACA should have the power to investigate the condition of the Universal Service Provider's network and require the Universal Service Provider to make improvements to its network where the expenditure can be justified in the public interest. The Government should respond promptly to the recommendations of the Department's Universal Service Obligation and Customer Service Guarantee Review (para. 7.41).

Recommendation 11

The Government should immediately review the operation of the customer service guarantee regime to ensure that it provides a high level of protection for consumers and that mass service disruption notices cannot be used by carriers to avoid their obligations to properly maintain their networks and provide an acceptable standard of service to consumers (para. 7.42).

Recommendation 12

The Government should direct the Australian Communications Authority to regularly monitor the level of faults on data services (para. 7.43).

Recommendation 13

The Committee commends the findings of the Payphone Policy Review as it relates to services for the disabled for close examination by the Government (para. 7.48).

Recommendation 14

The Government should fund the establishment of an independent disabilities equipment program using funding from the Universal Service Levy (para. 7.49).

Recommendation 15

The Government should require carriers to engage in extensive consultations with representatives of people with disabilities at an early stage in the planning process for the introduction of new telecommunications technology to ensure that appropriate disability equipment will be available in conjunction with the introduction of new technology (para. 7.50).

Recommendation 16

The ACA should be empowered and required to develop a comprehensive inventory of all significant telecommunications infrastructure, including geospatial data on Telstra's existing customer access network and mobile phone coverage, and make that information available to other carriers and service providers, local government, and other interested parties to facilitate planning for new infrastructure (para. 7.55).

Recommendation 17

Future Government programs aimed at enhancing telecommunications services should be designed to prevent Telstra from using those programs to maintain or strengthen its dominance of the telecommunications market. Where necessary this may involve restricting Telstra's participation in some aspects of those programs (para. 7.56).

Recommendation 18

In contracting for telecommunications services, government agencies and departments should be directed to design tender processes which facilitate participation by small and medium carriers, and to take into account the policy objective of developing a more competitive telecommunications industry in assessing tenders (para. 7.57).

Recommendation 19

In contracting for telecommunications services in rural and regional areas where there is limited infrastructure competition, government agencies and departments should be directed to participate where possible in demand aggregation arrangements with the objective of improving the incentives for the development of competitive infrastructure (para. 7.58).

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List of acronyms and abbreviations

2G	Second generation mobile phone technology
3G	Third generation mobile phone technology
ACA	Australian Communications Authority
ACCC	Australian Competition and Consumer Commission
ACE	Australian Communications Exchange Ltd
ACIF	Australian Communications Industry Forum
ADSL	Asynchronous Digital Subscriber Line
APEC	Asia Pacific Economic Cooperation
AUSTEL	Australian Telecommunications Authority
BAG	Broadband Advisory Group
BARN	Building Additional Rural Networks
Besley	Mr Tim Belsey was Chairman of the Telecommunications Service Inquiry
BPL	Broadband powerline systems
CAN	Customer Access Network
CAPEX	Capital expenditure
CBD	Central Business Districts
CCIF	Coordinated Communications Infrastructure Fund
CDMA	Code Division Multiple Access
CEO	Chief executive officer
CEPU	Communications, Electrical and Plumbing Union
CSG	Customer services guarantee
DCITA	Department of Communication, Information Technology and the Arts

DDSO	Digital Data Service Obligation
DEP	Disability Equipment Program (Telstra)
DRCS	Digital Radio Concentrator Systems
DSL	Digital Subscriber Line
DSLAM	Digital Subscriber Line Access Multiplexer
ESA	Exchange Service Area
Estens	Mr Dick Estens was Chairman of the Regional Telecommunications Inquiry
FTTC	Fibre to the curb
GHz	GigaHertz (billions of cycles per second)
GSM	Global System for Mobile Communications
HCRC	High Capacity Digital Radio Concentrator system
HFC	Hybrid fibre coaxial cable
HiBIS	Higher Bandwidth Incentive Scheme
HREOC	Human Rights and Equal Opportunity Commission
IAP	Internet Assistance Program
IP	Internet protocol
ISDN	Integrated Services Digital Network
ISP	Internet Service Provider
kbps	Kilobits per second
KHz	KiloHertz (thousands of cycles per second)
MB	Megabyte
mbps	Megabits per second
MHz	MegaHertz (millions of cycles per second)
MSD	Mass service disruption
NBS	National broadband strategy

NBSIG	National Broadband Strategy Implementation Group
NCF	National Communications Fund
NECG	Network Economics Consulting Group
NOIE	National Office for the Information Economy
NRF	Network Reliability Framework
NTN	Networking the Nation
OECD	Organisation for Economic Cooperation and Development
OPEX	Operating expense
OTC	Overseas Telecommunications Commission
PGS	Pair gain system
PLC	Powerline communications
PLT	Powerline telecommunications
PMG	Post Master General's Department
PSTN	Public Switched Telephone Network
RATE	Remote Areas Telecommunications Enhancement (Telstra program)
RIM	Remote integrated multiplexer
RTI	Regional Telecommunications Inquiry
SETEL	Small Enterprise Telecommunications Centre
SMA	Spectrum Management Agency
SME	Small Medium sized Enterprises
TAF	Telecommunications Access Forum
TEDICORE	Telecommunications and Disability Consumer Representation
TIO	Telecommunications Industry Ombudsman
TPA	*Trade Practices Act 1974*
TSI	Telecommunications Service Inquiry

TTY	Teletypewriter
USO	Universal Service Obligation
USP	Universal Service Provider
VDSL	Very High Rate Digital Subscriber Line
WANs	Wide Area Networks
WLAN	Wireless local area networks
WLL	Wireless local loop

Preface

Terms of reference

On 25 June 2002 the Senate referred the following matter to the Environment, Communications, Information Technology and the Arts References Committee:

(a) the capacity of the Australian telecommunications network, including the public switched telephone network, to deliver adequate services to all Australians, particularly in rural and regional areas;

(b) the capacity of the Australian telecommunications network, including the public switched telephone network, to provide all Australians with reasonable, comparable and equitable access to broadband services;

(c) current investment patterns and future investment requirements to achieve adequacy of services in the Australian telecommunications network;

(d) regulatory or other measures which might be required to bring the Australian telecommunications network up to an adequate level to ensure that all Australians may obtain access to adequate telecommunications services; and

(e) any other matters, including international comparisons, which are deemed relevant to these issues by the Committee.

The Senate originally asked the Committee to report by 21 February 2003 but it subsequently agreed to extend the reporting deadline until 5 August 2004 to allow the Committee to give the issues raised during the inquiry its fullest consideration and to take account of contemporary developments.

The inquiry

The Committee invited written submissions from interested individuals and organisations by an advertisement in the national press in July 2002, with an initial request that submissions be lodged by 16 August 2002. Invitations for submissions were sent to each State Premier and Territory Chief Minister as well as to in excess of 500 local councils across Australia. Submissions were subsequently received from 150 submitters, several of whom provided the Committee with additional material and supplementary submissions during the course of the inquiry. Submitter details are shown in Appendix 1.

In order to gain a better appreciation of the issues, the Committee undertook a series of public hearings with some 93 sets of witnesses, which involved visiting locations in every state of Australia and the Australian Capital Territory. Where practicable, the Committee sought to visit regional areas to gain insights into concerns held outside the major metropolitan areas, and the visits to Ballarat, Mildura, Launceston, Cairns, Rockhampton, Caboolture and Bunbury proved particularly illuminating in this

respect. Evidence was also taken from the Northern Territory by teleconference. Details of these hearings are shown in Appendix 2.

The Committee notes that its hearings program for this inquiry was essentially held in conjunction with its inquiry into the role of libraries in the online environment, which was also referred to it by the Senate on 25 June 2002. This approach was undertaken for two reasons. Firstly, while the terms of reference were relatively distinct, there was some element of overlap in terms of the need for the Committee to examine the proper role of Government in the delivery of online services. Secondly, the terms of reference for both inquiries had particular resonance in regional and remote areas and, as a matter of practicality, the Committee wished to maximise the value of any travel it undertook to such areas by combining the evidence-collection process.

The Committee tabled its report *Libraries in the online environment* on 16 October 2003.[1] While its recommendations were primarily directed at matters relating to improving the provision of online library services, recommendation 7 was directed towards an expanded level of broadband access to public libraries. It is a matter of regret to the Committee that its recommendation in this respect was not accepted by the Government.[2]

Where practicable, the Committee sought to supplement the formal discussions of the public hearings with site visits and informal briefings. These are listed in Appendix 3. Given their informal nature, no transcript was taken and no specific details of these visits are included in this report.

In the course of the hearings, a number of documents and other exhibits were tabled for the Committee's information. These are listed in Appendix 4.

Regulatory framework

Given the significance of adequate telecommunications services in Australia, it is the subject of extensive and fairly complex regulation. For ease of reference the Committee has given a brief overview of the regulatory framework in Appendix 5.

Related inquiries

One issue that arose in the course of the Committee's inquiry was that several telecommunications-related inquiries were conducted at around the same time.

The then Minister for Communications, Information Technology and the Arts, Senator the Hon Richard Alston, established the Telecommunications Service Inquiry (TSI) in March 2000 to assess the adequacy of telecommunications services in Australia. The TSI was chaired by Mr M.A. (Tim) Besley. The TSI reported to the Minister on 30 September 2000. In its report entitled *Connecting Australia* the Inquiry presented a

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1 *Journals of the Senate,* 16 October 2003, p. 2591

2 Government response tabled after the adjournment of the Senate on 25 June 2004.

number of observations on the adequacy of the telecommunications network. On 11 November 2002 the House of Representatives Standing Committee on Communications, Information Technology and the Arts tabled its report entitled *Wireless Broadband Technologies*. Two other relevant Government inquiries were also undertaken: the Regional Telecommunications Inquiry, chaired by Mr Dick Estens, which finalised its report entitled *Connecting Regional Australia* in November 2002 and the Broadband Advisory Group which released its report entitled *Australia's Broadband Connectivity* in January 2003.

In recognition of the overlap of the terms of reference of these inquiries and that of the Committee, a number of submitters chose to forward to this Committee copies of their submissions to those inquiries, rather than prepare new submissions. The Committee, in fact, welcomed such submissions as it was more interested in hearing their views than being concerned that their contributions may not have strictly aligned with its terms of reference. Several of those submitters went on to make significant contributions at a Committee hearing.

In this report, the Committee has recognised the findings of these other inquiries as appropriate and, where available, the Government's responses. A summary of these is given in Appendix 6. The Committee wishes to stress, however, that its terms of reference are the most comprehensive of these inquiries and that its inquiry is the only one truly independent of Government control.

Acknowledgements

The Committee wishes to express its appreciation for the cooperation of all witnesses to its inquiry, whether by making submissions, by personal attendance at a hearing or, as in many cases, by giving both written and oral evidence. While the contributions of many witnesses to this inquiry are recorded in this report, regrettably it has not been possible to cite the evidence of all witnesses. With close to 2000 pages of written submissions and 1000 pages of transcript, it has simply proven impracticable to recognise every contribution in this report. The Committee wishes to stress that all evidence – whether written or oral – was fully taken into account and that it is grateful for all witnesses' invaluable input.

In order to bring some coherence to its inquiry, the Committee adopted the approach of synthesising the key points in evidence into a list of issues about which it sought responses from a panel of Telstra senior executives at a hearing in Melbourne on 6 and 7 August 2003. Their evidence over those two days is heavily cited in this report as it frequently represented the definitive statement of Telstra's position across a wide range of issues. It should also be noted, however, that the Committee had commenced an inquiry into competition in broadband services before the finalisation of this report, where there was some overlap of evidence, especially in relation to the issue of the adequacy of the infrastructure for the delivery of data services. Evidence given to that inquiry may also be cited in this report where it might be more contemporary.

The Committee also wishes to express its appreciation to those who hosted it during site inspections, which added greatly to the Committee's appreciation of the issues being discussed at the formal hearings.

The Committee also records its appreciation to the officers of the secretariat who assisted with the conduct of the inquiry and the drafting of this report.

Possible harassment of witnesses

Finally, the Committee has to record that concerns were raised with it fairly early in its inquiry that approaches had been made by Telstra personnel to witnesses which were taken as intimidatory. The Committee was also advised of Telstra staff who felt constrained from cooperating with the inquiry in case unfavourable action was taken against them by the company.

After receiving the advice of the Clerk of the Senate that such actions could be seen as being in contempt of the Senate, on 13 December 2002 the Committee wrote to Dr Ziggy Switkowski, Telstra's Chief Executive Officer, to advise him that the Committee viewed as inappropriate reference to a person's status as a contributor to the Committee's inquiry, even when seeking only to correct a fault alluded to in their submission.

In his response dated 4 February 2003, Dr Switkowski assured the Committee that Telstra would not in any circumstance seek to influence the evidence of customers or staff, but had contacted certain submitters only to ascertain whether their complaint had been rectified and if further action was required from Telstra. In view of the Committee's concerns, Dr Switkowski noted that Telstra had ceased such contact in order to remove any possibility of its actions being misunderstood. At the request of Telstra made at the hearing in Melbourne on 6 and 7 August 2003, the Committee agreed that Telstra could contact certain nominated submitters who could be expected not to be intimidated by such contact and who had raised problems with which Telstra may have been able to provide assistance.

Senator John Cherry
Chair

Chapter 1

An overview of telecommunications in Australia

1.1 The Australian telecommunications network is a dynamic entity and one which is undergoing constant development in response to growing community demand and technological change. Indeed, in the course of its inquiry the Committee's attention was drawn to an almost constant change scenario, both positive and negative,[1] which has hindered the task of its description in other than relatively general terms. Any statistics cited as to the size of the network, traffic volumes by differing technology, market shares, etc would become quickly dated.

1.2 Thus, before seeking to give an overview of the network itself, the Committee believes that it is helpful to an understanding of the present situation by setting the current structure of the telecommunications industry into its historical context. Appendix 5 provides a brief description of the regulatory system, an understanding of which is important to the discussion of many of the issues addressed in this report.

Key developments[2]

1.3 Telecommunications policy in Australia has been driven by the need to provide services to a population concentrated largely in cities separated by long distances, and linking the major cities with high capacity trunk services, while also seeking to reach remote areas with basic services. A fundamental policy tenet has been that basic telecommunications services are reasonably accessible to all people in Australia on an equitable basis.

Early history: 1901-1988

1.4 The Commonwealth Government assumed responsibility for postal, telegraphic and telephonic services in Australia upon Federation in 1901.[3] Until the introduction of limited competition in 1991, telecommunications services were operated and regulated by various publicly-owned monopoly organisations such as the Postmaster General's Department (PMG). The Overseas Telecommunications Commission (OTC) was established in 1946 with responsibility for all international telecommunications services.

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1 While investment in new technology is almost constant, IP1 Australia Pty Ltd, operator of a long-haul fibre optic broadband network between Melbourne, Adelaide and Perth was placed into receivership, and subsequently purchased by Telstra during the Committee's inquiry.

2 The material in this section of the report on the history of telecommunications regulation in Australia is largely drawn from: Department of Communications, Information Technology and Arts, *Liberalisation of the telecommunications sector – Australia's experience*.

3 Under section 51(v) of the *Constitution.*

1.5 The PMG continued to provide all domestic telecommunications services until 1975 when its telecommunications functions were moved to the newly created and subsequently corporatised Telecom Australia. Telecom became the monopoly telecommunications carrier of domestic services within Australia. As well as being the network provider, Telecom was also the technical regulator in customer equipment, private networks and value-added services.

1.6 In 1981 the Government formed AUSSAT. It was a publicly-owned carrier established to own and operate a domestic satellite system. AUSSAT started commercial operations in 1985 when the first satellite was launched.

Separation of policy, regulatory and operational roles

1.7 In May 1988 the Government announced directions for restructuring of the telecommunications industry's regulatory environment and the operations of the Government-owned carrier. The stated goals stressed the need for an efficient and responsive telecommunications industry capable of successful commercial operation in Australia and overseas, while continuing to serve important social objectives with basic telephone services. The reforms were implemented in the *Telecommunications Act 1989* and related legislation.

1.8 As part of the major reforms the basic monopolies of Telecom, OTC and AUSSAT were retained but competition was introduced in the supply of:

- value-added network services;
- customer premises cabling; and
- supply, installation and maintenance of customer premises equipment.

1.9 The operational and regulatory functions of Telecom were also separated. The Australian Telecommunications Authority (AUSTEL) was established in July 1989 as an independent industry-specific regulator with responsibility for technical regulation, protecting the carriers' exclusive rights, protecting competitors from unfair carrier practices, protecting consumers' interests, administering price control and universal service levy arrangements, and promoting carrier efficiency.

1.10 AUSTEL introduced a form of 'light-touch' pricing regulation based on limiting prices to rises in the consumer price index minus a figure to allow for efficiency improvements (CPI-X). Within that framework there were individual sub-caps on some prices.

International reform of telecommunications

1.11 The reforms which were occurring in Australia were part of an international trend towards microeconomic reform of essential service industries such as telecommunications. During the 1980's and 90's there was a broader recognition by governments of the need to transform Australia into a dynamic and outward-looking economy. Governments which had been heavily involved in the supply of essential

services for businesses and households sought to promote greater efficiency in the provision of those services by opening them to competition.

1.12 Internationally, the importance attributed to telecommunications as a traded service in its own right, as well as a backbone for commercial development and trade in all other economic sectors, was being recognised in international trade negotiations such as the Uruguay Round of the General Agreement on Trade in Services. In September 1996 the APEC Telecommunications Ministers endorsed the Reference List of Elements of a Fully Liberalised Telecommunications Services Sector. The Reference List provided a broad perspective on the expectations of a liberalised telecommunications sector and catalogued the key features of a liberalised market largely from the point of view of users and other market participants. Also in 1996 the European Commission adopted a Directive which called for the introduction of competition in the provision of voice telephony and infrastructure by 1 January 1998. The harmonisation framework aimed at creating a European market based on common principles for access to networks and services, a common regulatory environment and harmonised standards for services and technologies.

The telecommunications carrier duopoly: 1990-1997

1.13 The Commonwealth Government announced further reforms of the structure and ownership of telecommunications networks in 1990. A phased approach was adopted to move from monopoly provider to open competition in basic services. As part of the reform arrangements a second carrier would be given sufficient time, and a relatively stable and predictable environment, within which to establish itself in the marketplace before the advent of full competition from 1 July 1997.

1.14 The strategy was implemented in 1991 and 1992, largely as a function of the *Telecommunications Act 1991*. Key components of the strategy included:

- merging Telecom and OTC to become Telstra Corporation;
- allowing Optus to take over AUSSAT and operate as a facilities-based network competitor;
- this facilities-based duopoly was to end in 1997, leading to open competition;
- licensing three public mobile telecommunications service operators (Telstra, Optus and Vodafone);
- mandating open competition in the areas of:
    - resale of domestic and international telecommunications capacity and
    - public access cordless telecommunications services; and
- giving AUSTEL a stronger mandate to promote competition and to protect the interests of consumers, through setting and monitoring carrier service

quality indicators, monitoring and reporting on price controls, and enforcing carrier licence conditions that included specific consumer safeguards and the universal service obligation.

1.15 The universal service obligation (USO) represented a cornerstone of the telecommunications framework.[4] However, with the introduction of network competition, the Commonwealth Government considered it was not feasible for one carrier to both provide and fund social obligations. The carrier fulfilling the USO would therefore be compensated by other participating carriers for any USO losses that were approved by AUSTEL. Telstra was declared the sole USO carrier throughout Australia.

1.16 The Spectrum Management Agency (SMA) was created in 1993 to manage the radiofrequency spectrum, taking over this role from the Commonwealth Department of Transport and Communications, and subsequently merged with AUSTEL to form an agency regulating both telecommunications and the radiofrequency spectrum. This was arguably the first implicit recognition of the process of convergence, which continues apace today.

Telstra partial privatisation

1.17 The Commonwealth Government moved to implement the partial privatisation of Telstra in May 1996 by selling one third of its equity in the company by means of a share float. This partial privatisation, which proceeded in late 1997, removed some previous constraints on Telstra's structural and operational capacity and provided a stimulus to Telstra's ability to raise capital for network expansion and modernisation and to keep pace with changing technologies.

Open competition: 1 July 1997

1.18 A new era of open competition began when the *Telecommunications Act 1997* and related legislation came into force in July 1997. The stated policy objective of the legislative reform package was to provide a regulatory framework that promoted the long-term interests of end-users of telecommunications services, and the efficiency and international competitiveness of the Australian telecommunications industry.

1.19 The pro-competitive reforms allowed new entrants to the market to build and operate telecommunications infrastructure. Past regulatory barriers to market entry, as well as a number of artificial regulatory distinctions, such as between mobile and fixed carrier licences, were removed. No restrictions were imposed on entry to any telecommunications service market and restrictions on the types of technology used were minimised.

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4 Part 13 of the *Telecommunications Act 1991* provided for the assessment, collection, recovery and distribution of the universal service levy imposed by the *Telecommunications (Universal Service Levy) Act 1991* to cover the costs of providing the universal service obligation.

1.20 The reforms also introduced an access regime under which the then Trade Practices Commission (now the Australian Competition and Consumer Commission (ACCC)) could 'declare' certain services under Part XIC of the *Trade Practices Act 1994*. Once these services were declared the company or companies providing those services were obliged to provide access to those services to other carriers or carriage service providers. If the terms and conditions of access could not be successfully negotiated between the parties the ACCC could intervene and arbitrate on the dispute.

Further privatisation of Telstra

1.21 While the Prime Minister, John Howard, announced as early as March 1998 the Government's intention to sell the two-thirds share of Telstra which was still government-owned, prior to the October 1998 federal election the Government committed to a staged approach to any further privatisation. It announced that it would first sell a further 16 per cent of its equity in Telstra, with a commitment that there would be no further sell down of the Government's remaining share until an independent inquiry certified that Telstra's services were adequate.[5]

1.22 In June 1999, legislation was passed authorising the sale of a further 16.6 per cent of Telstra. The majority of the revenue from the sale was allocated to reduce Commonwealth Government debt. Funds were also made available to upgrade services in rural and regional Australia. The Government has signalled its intention to sell the remaining 50.1 per cent of its equity, but its plans have been rejected by the Senate.[6]

Ongoing review

1.23 Since the introduction of the *Telecommunications Act 1997* a number of amendments have been made to the regulatory framework to seek to enhance its effectiveness. In the main, the amendments respond to industry concerns about the ability of the ACCC to respond to issues in a timely manner and the ability of Telstra to take advantage of its residual market power.

1.24 The powers of the ACCC have been broadened and strengthened in a number of areas including, for example, the power to impose record-keeping rules on the telecommunications industry; to enable the ACCC to report and publicly release competition related data; to issue competition notices; and, in relation to enhancing the access arbitration process, the ACCC's roles in attending, mediating and arbitrating access negotiations.

1.25 The *Telecommunications Competition Act 2002* in particular was designed to facilitate increased competition and investment in the telecommunications industry

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5 See Appendix 6 for details of this and related inquiries.

6 Most recently, the Telstra (Transition to Full Private Ownership) Bill 2003 [No. 2] was negatived at the second reading stage by the Senate on 30 March 2004.

and to provide a more transparent regulatory market, particularly in relation to Telstra's wholesale and retail operations.

1.26 Appendix 6 outlines some more recent inquiries which have been conducted into telecommunications in Australia. The main inquiries have been the Telecommunications Service Inquiry and the Regional Telecommunications Inquiry which have both looked at the adequacy of telecommunications services. The Government has acted on the recommendations of those inquiries by introducing a range of measures aimed at addressing individual issues identified by those inquiries. However, its response has consisted of a raft of narrowly focused short term programs which have neither set out a long term vision for telecommunications in Australia nor provided the leadership necessary to take the industry forward.

Regulation of telecommunications infrastructure

Carriers and service providers

1.27 The main entities regulated by the *Telecommunications Act 1997* are carriers, carriage service providers and content service providers.

1.28 Carriers own or operate telecommunications infrastructure. They must be individually licensed by the Australian Communications Authority. A carrier licence authorises the owner of network units to supply telecommunications services to the public. Licence conditions oblige carriers to meet a number of specified requirements including USO contributions, payment of annual licence fees, fulfilment of industry development plans and compliance with the telecommunications access regime. There is no limit to the number of carrier licences that may be issued by the ACA.

1.29 Service providers sell services to the public which are provided using their own, or another carrier's, infrastructure. They are not subject to licensing requirements, but are required to comply with legislated service provider rules and other provisions of the Act, such as operator and directory assistance services, itemised billing and number database information.

1.30 The new open and competitive telecommunications environment in Australia is characterised by increasing numbers of private sector participants (including foreign communications companies and new players such as utility companies). As at 30 June 2004, there were some 105 carriers licensed by the ACA and over 1400 carriage service providers were registered with the Telecommunications Industry Ombudsman. In Australia there were an estimated 11.58 million standard fixed telephone lines and 14.3 million mobile phone subscribers.

Fixed line customer networks

1.31 The Public Switched Telephone Network (PSTN) referred to specifically in the Committee's terms of reference is essentially the Telstra national fixed network delivering basic telephone services. It has been described as 'the part of the telecommunications network which enables any customer to establish a connection for

voice communication with any other customer either automatically or with operator assistance'.[7]

1.32 The 'backbone network' is the trunk or interexchange network. The fixed line customer access network (CAN), also referred to as the 'local loop', connects the customer's home telephone to a local area switch. It is mainly comprised of copper cable but may use wireless or satellite technologies. It enables access to voice, dial up Internet and broadband services. A number of companies provide fixed line services for businesses in the capital city CBD's.

1.33 Hybrid Fibre Coaxial (HFC) networks have been rolled out by both Telstra and Optus in parts of some capital cities. These networks carry signals on optic fibre cables to nodes which then broadcast the signals for a large number of customers on a common coaxial cable. Individual subscribers are connected to the common cable and tune into that part of the signal that is of interest to them. HFC networks were originally developed to provide pay TV services but can be also be used to provide voice telephony and broadband access to the Internet. Telstra offers pay TV and broadband services over its HFC cable while Optus also offers voice telephony. Telstra is currently in the process of digitising it HFC network. This will make it possible to offer a larger number of pay TV channels over the cable.

1.34 The Telstra and Optus HFC networks largely duplicate each other in area of coverage. Neighborhood Cable Pty Ltd has rolled out an HFC network in regional Victoria and smaller networks exist in Darwin and some other places.

1.35 In Canberra, TransAct Communications is in the process of rolling out a high speed network which delivers telephony, free-to-air and pay TV, and Internet services. The TransAct network is based on a fibre-to-the-curb (FTTC) architecture in which high capacity optic fibres are taken 'deep' into the network (within 300 metres of the connection to the home). The last segment of the connection to the user consists of a dedicated pair of copper wires. The short length and high quality of the copper link allow high capacity data to be carried over the network. The network supports voice telephony, dial-up Internet, pay TV, broadband and video on demand. In Perth, Bright Communications has started building a network with similar capability.

1.36 Both TransAct and Bright have local power utilities as key founding shareholders. This gives them access to existing power poles to run their cables and allows telecommunications ducts to be laid in conjunction with underground power ducts.

Mobile networks

1.37 Telstra claims that its terrestrial mobile networks can reach about 98 per cent of the country's population and, with the use of a car external antenna kit, have coverage

7 Telecommunications Service Inquiry, *Connecting Australia*, p 248.

of close to 20 per cent of the land area.[8] The company has an ongoing base station installation program which will boost these numbers.[9]

1.38 The auctions in 1988 and 2000 of radiocommunications spectrum in the 800 MHz and 1.8 GHz bands (used primarily for mobile telephony technologies) has facilitated the entry into the market of several new mobile phone carriers. Telstra operates both a GSM (Global System for Mobile Communications) and a CDMA (Code Division Multiple Access) network while Optus and Vodafone are operating only GSM networks. GSM and CDMA are mobile telephone systems based on digital transmission with, in Telstra's case, its CDMA network having twice the geographic reach of its GSM network. These 2nd generation (2G) networks provide voice services and data messaging.

1.39 Although competition is stronger in the mobile sector than in the fixed line network, Telstra remains the dominant carrier with some 45 per cent of market share. Optus has 34 per cent and Vodafone 17 per cent. Virgin Mobile Australia is now operating profitably and is seeking to grow its subscriber base.

1.40 At a cost of some $3 billion, Hutchison Telecommunications has launched a 3rd generation (3G) network, a high capacity digital mobile phone system. The number of subscribers is growing but only passed 100,000 in early 2004. It offers services such as voice, Internet and real time video. Vodafone is reported to be seeking to establish a globally compatible 3G network, including an investment in Australia of hundreds of millions of dollars.

1.41 Several witnesses to the Committee's inquiry noted that mobile phone connections could often not be obtained within the areas claimed by carriers to be served, and were critical of the carriers as a result. It must be noted that there will be areas inside the claimed coverage zone of any cellular system where a mobile phone may not work due to a variety of factors. For example, reception may be degraded or non-existent in certain places, such as basements, lifts, underground car parks and large concrete buildings. Reception can also be affected by mountains, tunnels and road cuttings. The Committee was told that Telstra MobileNet is endeavouring to provide the best depth of reception practicable in such areas and it assumes that all carriers have similar ambitions.

Satellite

1.42 Optus owns and operates all of Australia's satellites. Some satellite services are provided by use of foreign satellites with coverage over parts of Australia. However,

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8 Telstra provided the Committee with maps showing the extent of coverage of its CDMA and GSM networks. Unfortunately, their use of colour coding meant that they could not be reproduced in this report. It follows from the text that coverage is based on population centres, with no service provided to some 80 per cent of the country.

9 Mr Bill Scales, Group Managing Director, Regulatory, Telstra, Official Committee Hansard, 6 August 2003, p. 830.

space on the Optus satellites is leased by other service providers such as Foxtel and Telstra, with Telstra offering a satellite mobile network which covers 100% of Australia. Satellites are used to provide pay TV broadcasts, broadband access, mobile phone access and some fixed telephony services.

1.43 In July 2001 the Government finalised a contract with Telstra to improve services for consumers in the extended zones using $150 million from the proceeds of the second partial sale of Telstra. Under this agreement all extended zone customers of Telstra gained access to untimed local calls and became eligible for free installation of a subsidised two-way satellite Internet service.

Wireless

1.44 In addition to mobile services a variety of wireless technologies can be used to provide voice, dial up Internet and broadband services. However, to date these technologies have most often been used to fill holes in the coverage of fixed line networks. Wireless networks have not yet become a significant rival to other network architectures although the use of wireless technology is becoming more common.

The Committee's inquiry into the Australian telecommunications network

1.45 The Australian telecommunications network is the aggregation of all of the above infrastructure components – consisting of a wide array of wired and wireless delivery systems. It begs straightforward description simply because, in any one location, there might be an unique mix of delivery systems operational and which are ever-changing due to technological or competitive developments. Resolution of an infrastructure problem is almost a matter for case-by-case determination.

1.46 The Committee's terms of reference essentially require it to assess the ability of the network to provide adequate services to all Australians, particularly (but not exclusively) in rural and regional areas, and to assess what more might need to be done to ensure that adequate services are available. The terms of reference also place an emphasis on the public switched telephone network, Australia's longstanding source of communications services, and significant for the traditional market power it has given Telstra for its 'last mile' connectivity to all premises.

1.47 Telstra is by far the largest participant in the Australian telecommunications market. With some 65 per cent overall market share, it continues to dominate the key sectors of the network, including the provision of infrastructure and the public switched telephone network, and is the Universal Service Provider. Although there are a number of other participants who now operate significant networks in competition with Telstra they usually offer only one type of service or offer services only in specific geographic areas. There are also a significant number of service providers who re-sell Telstra services to the public.

1.48 Both of these groups rely to a greater or lesser extent on the use of some of Telstra's network and Telstra earns significant revenue from providing its competitors with wholesale services. For these reasons much of the discussion during the inquiry

and in this report has focused on the role of Telstra and the performance of its network.

1.49 While the Committee has given an overview above of infrastructure based on wired and wireless delivery platforms the view of most industry participants is that the future of the network lies principally in fixed line optical fibre networks, supplemented by wireless technologies for mobile applications and to fill niches in the fixed line network. The current copper based CAN is unlikely to be able to meet the future needs of consumers and clearly has a limited life. Its performance is also limited by the use of outdated technology in the network such as pair gain systems. The question facing policy makers is what policy steps need to be taken to ensure that the existing network is operating at an optimal standard, and to provide leadership in developing a network which will take Australia forward during the new century. Although this report contains some recommendations on the future of the network the issue of network renewal will be addressed in more detail in the Committee's report on broadband competition.

1.50 In the chapters that follow the Committee has found it most convenient to address its terms of reference by examining the network’s capacity to deliver services; the current impediments to the delivery of services; Government programs aimed at improving access; competition and regulatory issues; and the future of the telecommunications network.

Chapter 2

Voice and data services

2.1 The Committee's terms of reference require it to make an assessment of the capacity of the Australian telecommunications network to deliver adequate services to all Australians. In this chapter the Committee examines the adequacy of the network to deliver voice and data services and the impediments inherent in the network which limit the services which can be delivered to customers. In later chapters of the Report the Committee examines other impediments to the delivery of services such as network faults and maintenance issues, and various government access programs designed to improve the availability of services.

2.2 The Australian telecommunications network was originally designed and developed for voice telephony. The Committee received relatively few complaints about the quality and availability of voice services. Most of the concerns relating to voice services referred to a loss of service due to faults and the general state of the network, or to the inability to obtain a connection because of the use of pair gain systems.

2.3 Data services were initially developed and used mainly by universities, governments and large businesses. Information technology and data transmission services have grown to become one of the cornerstones for improving business efficiency and economic development. With the development of the Internet the demand for data services by small business and consumers has rapidly expanded. In this chapter the Committee discusses the extent to which Australians have reasonable, comparable and equitable access to services such as the Internet, particular through broadband services.

2.4 It must be stressed that the Committee took evidence over a period of 10 months and in the interim there was progress made across several fronts by Telstra and the other telecommunications infrastructure providers which may bring into question the continuing validity of witnesses' evidence. In particular, Telstra has in place several ongoing programs, involving both cable replacement and continuous augmentation of its fixed and mobile networks in response to increased demand and competitive pressure. The evidence cited below may, therefore, have been overtaken by events.

2.5 Accordingly, the Committee has sought to identify key trends on which it can make judgements on the matters referred to it, rather than basing its conclusions on individual incidents or claims.

Fixed line networks

Network Capacity

2.6 The key source of evidence on the adequacy of Telstra's fixed line network came from representatives of the Communications, Electrical and Plumbing Union (CEPU),

the main union representing employees in the telecommunications industry, who gave evidence at several of the Committee's hearings across Australia. Given that the union's members are working in the field, undertaking repairs and related activities in relation to the fixed line network, the Committee gave their evidence particular weight. Their evidence was consistent: that the Telstra network is in poor condition and declining. Submissions from the various branches of the CEPU also referred to major cables which are full and for which no spare capacity exists and to the reduction in capital expenditure by Telstra.

2.7 It is not helpful to list here the litany of individual concerns raised with the Committee, many of which have no doubt since been fixed. As discussed in the Preface, Telstra made it clear to the Committee that it was closely monitoring the evidence being given to the Committee and that it was anxious to address complaints, especially those affecting individuals.

2.8 The number and range of systemic faults which constrain the network's capabilities were of greatest concern to the Committee, faults which will cost hundreds of millions of dollars to fix. These included faulty cables, the use of inferior pair gains technology, and systems which are liable to fail in heavy rainfall and from lightning strikes. These are discussed in detail below and in the next chapter.

2.9 It was not only the CEPU raising concerns about the state of the Telstra network. For example, King Island Council raised its concerns about continual line noise from electric fences, decaying lines, and cables well past their use by date.[1]

2.10 Poor or outdated telecommunications infrastructure can restrict the ability of communities to attract new businesses and employment to their area. This problem can be particularly significant for rural and regional areas seeking to attract new businesses and industries to their area. Break O'Day Council in Tasmania offered virtually free access to a council building in Fingal in order to attract businesses to the town. It received responses from two parties interested in setting up call centre type operations. Unfortunately it was found that the existing telephone network was unsuitable for their operations forcing those parties back to major centres such as Hobart and Launceston. The Council's submission said that:

> Poor telecommunication infrastructure was clearly the major contributing factor in this community being unable to secure new and long term employment opportunities in this instance.[2]

2.11 However, not all submitters were dissatisfied with the infrastructure used to provide their voice services. To quote just one example:

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1 King Island Council, Submission 19.

2 Break O'Day Council, Submission 11.

> As a rural subscriber to the telecommunications network it appears to me that the delivery of voice services is adequate, from an infrastructure point of view.[3]

Dial-up Internet speeds

2.12 The most common method by which home users access the Internet is through the use of a modem over a standard telephone line. These modems normally have a maximum connection speed of 56 kbps which is adequate for browsing the Internet, but is generally considered too slow for interactive games, downloading music or video clips, or for business purposes. Although the number of dial up subscriptions is declining, at the end of September 2003 there were 4,522,000 subscriptions to dial-up services but only 690,000 subscriptions to other services.[4]

2.13 The area of greatest concern with dial-up access to the Internet is slow dial-up speeds. The Committee received evidence about this issue from a number of submitters:

> We are a progressive company based in Macksville and operate 3 separate sites including a new and used sales yard, a service, spares and bodybuilding shop and a home office. In total we have 10 voice lines, 3 modem lines, 2 fax lines as well as 7 mobile phones. We have recently found improvement in our sales yard with connection speed to the Internet but still have problems with connection speed from our Industrial Site to our sales yard. Due to limitations of available services and the exorbitant associated costs with other options, we currently have our sales yard dial in using terminal services to access programs at our main yard. The connection speed varies from 26k to 31k on a 56k modem. The average is around 28k. As you can appreciate this speed is quite slow when dialling into another system to access information.
>
> Our home office site, which is operated six days per week, has a maximum connection speed of 21k. The average connection speed is usually around 19k. This slow connection speed means that product updates cannot be downloaded because they time out, share trading is almost impossible because of the slow data exchange and we are limited in so many applications.[5]

2.14 The concerns seemed to be greatest in rural areas, particularly for farmers not living close to an exchange:[6]

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3 Ms Roslyn Joseph, Submission 32.

4 Australian Bureau of Statistics, *Internet Activity - September 2003*, Series 8153.0, p 5.

5 E-Nambucca Project Committee, Submission 66.

6 Guyra Shire Council, Submission 15; Parry Shire Council, Submission 23; Orana Regional Development Board, submission 42; Mr Frank Calabrese, Submission 63; South West Development Commission, Submission 144

> Anecdotal comments obtained during the community consultation indicated that farmers on properties distant from the telephone exchange could not achieve 14.4 kbps and were more likely to have 9.6 kbps and that the usage of dial-up for Internet access was not practical for the pursuit of commercial activities.[7]
>
> I would now like to talk about dial-up services within the region. The current prescribed minimum download of 19 kilobits per second in major population areas does exist in the region but is inadequate outside those centres. Download speeds can be as low as 4.8 kilobits per second, with implications for core Internet services such as e-banking and email. We have ad hoc evidence to suggest that around 3,000 to 4,000 households in the south-west cannot achieve the minimum national standard.[8]

2.15 While concerns about dial up speeds most often related to rural areas there was also criticism of services in urban areas:

> Telstra's performance in providing end-user communication circuits of sufficient quality for data and Internet services to domestic, small and medium businesses is unacceptable. At present, Telstra is unable to provide adequate dial-up data services to all of the Sydney Statistical District let alone regional, rural or remote areas.[9]118
>
> I experience a speed of between 12 kbps and 14. 4 kbps, which is hopeless. For example, you cannot download pictures, JPEG files take forever and even email is slow. It is just like subsistence surviving you cannot get any enhanced services whatsoever. You could not do anything with web sites or anything like that.[10]

2.16 Concerns about dial up speeds were also expressed by King Island Council. Telstra has been trialling a Wireless Local Loop on King Island as a cost effective means to address poor quality copper cabling. However, those connected to the service are restricted to a dial up Internet speed of a mere 14.4 kbps.[11]

2.17 The Committee also received evidence that the reason for low dial-up speeds often lay with the users and ISPs equipment, not with the line. The Committee was told about a joint venture between the Pilbara Development Commission and Telstra

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7 Ms Anita Iuretigh, Executive Officer, Warren-Blackwood Economic Alliance, Committee Hansard, 9 May 2003, p 602.

8 Mr Don Punch, Chief Executive Officer, South West Development Commission, Committee Hansard, 9 May 2003, p 616.

9 Ms Vicki Brooke and Mr Grahame Wilson, Submission 118, p 2.

10 Ms Vicki Brooke, Committee Hansard, 20 May 2003, p 784.

11 King Island Council, Submission 19.

Country Wide which was able to test consumers' lines and work out exactly where the problem with dial-up speed arose. It showed that:

> In about 95 per cent of cases on our region it was not actually the line but the reconfiguration in the computer, which had in most cases been provided by the ISP, that was the issue. So there was an incompatibility between the PC and the modem which was causing the deterioration in speed.[12]
>
> I understand from Telstra Country Wide that the Pilbara region now has the greatest proportion of customers that connect at 28.8 kilobits per second in the whole of non-metropolitan Western Australia.[13]

2.18 In its submission Telstra added that Internet speeds available via the PSTN vary greatly throughout Australia, depending upon a multitude of factors including the PC and modem being used, the quality of the local loop, and traffic congestion.[14] It went on to observe that:

> It is widely assumed that dial up data speeds commonly approach 56kbps in metropolitan areas, while in rural and regional areas access speeds are too slow for effective use. Both assumptions are wrong. Speeds of 56kbps are virtually never achieved, regardless of where a consumer lives. Moreover, Telstra conducted a review in June 2002 of actual data speeds its regional customers were obtaining, which indicated that 87 per cent of customers achieve speeds in excess of 28.8kbps, while in excess of 97 per cent of consumers achieve speeds in excess of 14.4kbps.

2.19 Telstra provided the Regional Telecommunications Inquiry with figures showing connection rates to Telstra's Big Pond Internet server. These showed that the majority of users were connecting at speeds greater than 28.8 kbps and that only 2.64% of users were connecting at speeds slower than 19.2 kbps. The Regional Telecommunications Inquiry report went on to note that these figures included the influence of incorrectly configured customer equipment and that 'it is likely that problems in the Telstra network are affecting well under one per cent of dial-up Internet use'.[15]

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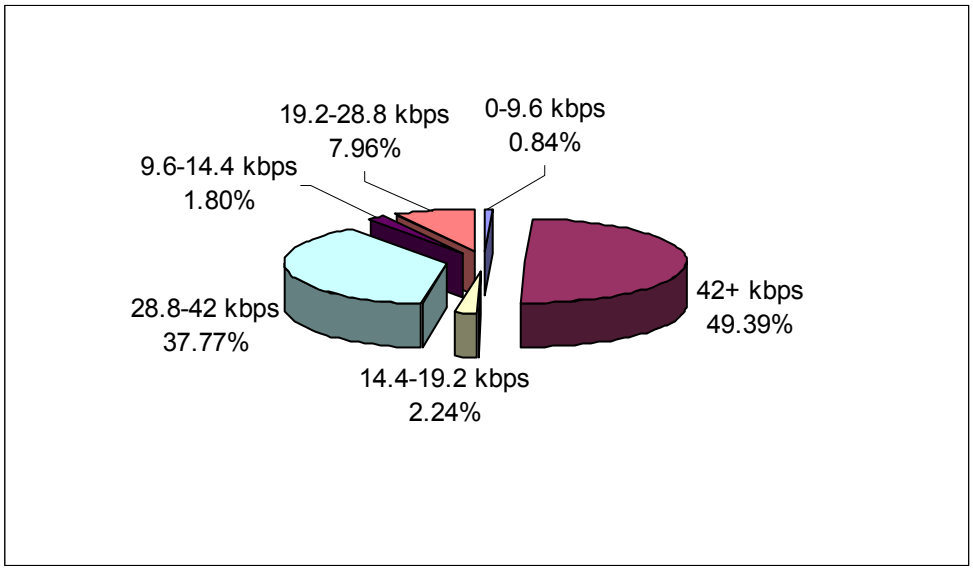
12 Mr Mark Hainsworth, Senior Policy Officer, Policy Unit, Strategy and Legislation, Department of Local Government and Regional Development, Western Australia, Official Committee Hansard, 9 May 2003, 664.

13 ibid.

14 Telstra Corporation Limited, Submission 107, p 48.

15 Regional Telecommunications Inquiry, *Connecting Regional Australia*, p 154; the same data was provided to the Committee in Telstra's submission, Telstra Corporation Limited, Submission 107, p 49.

Connection rates to Telstra's Big Pond Internet server, June 2002[16]



2.20 The figures provided by Telstra and reproduced by the Regional Telecommunications Inquiry only give an indication of the speeds at which those who are using dial-up connections to the Internet are connecting. They do not show what proportion of potential dial-up customers have abandoned efforts to access the Internet because low dial-up connection speeds make it impractical to use the Internet. The Regional Telecommunications Inquiry also appears to have overlooked the fact that the use of pair gain systems by Telstra significantly reduces that maximum dial-up speed for large numbers of users who may well feel that this represents a problem in the Telstra network.

2.21 The Internet Assistance Program[17] (IAP) was aimed at addressing concerns about low dial up speeds. However, the Regional Telecommunications Inquiry found that 37 per cent of its submissions noted concerns with dial-up Internet speeds and the quality of service provided. A submission to that inquiry showed that 82 per cent of survey respondents in one area of Western Australia were not aware of the IAP.[18]

2.22 Evidence given to the Committee continued to raise questions about the adequacy of the IAP:

> There are claims that there has been a steady improvement with dial-up services and their performance over recent years. It is arguable that mostly this is a result of consumers becoming more computer literate. More recently Internet difficulties have been assisted by the Internet Assistance

16 Regional Telecommunications Inquiry, *Connecting Regional Australia*, p 154.

17 See Appendix 5 for details.

18 Regional Telecommunications Inquiry, *Connecting Regional Australia,* p 155.

> Program (IAP) developed by the Department for Communications, Information Technology and the Arts. This initiative is welcome although consumers are still reporting great difficulties in regional and rural areas.[19]

2.23 In response to these concerns the Inquiry recommended that a licence condition be placed on Telstra that would require all Australians to be guaranteed dial-up Internet speeds, or equivalent throughput, over the Telstra fixed line network of at least 19.2kbps.[20] The Government responded to this recommendation by imposing a new licence condition on Telstra which replaces the existing IAP agreement. The Department of Communications, Information Technology and the Arts states that:

> The Telecommunications Service Inquiry (TSI) and the RTI identified that 19.2 kbps was an adequate speed for basic Internet browsing and email that could be delivered at a reasonable cost to the community.[21]

2.24 The evidence received by the Committee frequently questioned the adequacy of a 19.2 kbps dial up connection:

> We are saying that even the Telstra standard of 19.2 kbps is not enough. You really should be up around 48 kbps to do something.[22]

> You have 20 or 30 emails coming down the line and suddenly there is a large one with a one-megabyte attachment to it. You might as well give up. Then you have to use special techniques to try to delete that from the server so that you can get the rest of them. Otherwise, it just becomes ridiculous. That is at a speed of 9.6 kbps. It is not much better at 19 kbps, and it can be very frustrating even at 33 kbps, and then of course you start to get into the more normal speeds, the forties and early fifties, which you can get in certain parts of the metropolitan area.[23]

> I would say it would be virtually no value at all in the long term. I think they should be looking at better solutions because we are supposed to be getting an equal service across the nation. I connect in Ouyen regularly. I am in the centre of town, and at home I get probably an average of 44 kilobits per second[24]

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19 Consumers' Telecommunications Network, Submission 88, Attachment 2.

20 Regional Telecommunications Inquiry, *Connecting Regional Australia*, Recommendation 4.1, p 156.

21 Department of Communications, Information Technology and the Arts, FAQ – 19.2 kbps Licence Condition, http://www.dcita.gov.au/Article/0,,0_1-2_3-4_102257,00.html.

22 Ms Vicki Brooke, Committee Hansard, 20 May 2003, p 785; see also Roslyn Joseph, Submission 32.

23 Mr Graham Wilson, Committee Hansard, 20 May 2003, p 783.

24 Mr Robert Jardine, Secretary/Treasurer, Ouyen Incorporated, Committee Hansard, 23 April 2003, p 352.

2.25 The Committee asked Telstra about the reason that 19.2 kbps was chosen. In response it indicated that it was consulted about the decision but the matter was a public policy issue and it was not particularly involved in the establishment of the 19.2 figure.

2.26 The Committee also sought to establish what it would cost to upgrade the Telstra network to provide a higher minimum dial-up access speed for all Australians. In its report the Telecommunications Service Inquiry noted that in 1998 the ACA estimated that the cost of upgrading Telstra's customer access network to provide a minimum data speed of 33.6 kbps would be in the order of $4 billion. The ACA also found that an upgrade to 28.8 kbps would incur very similar costs.[25] The Telecommunications Service Inquiry reported in 2000 that Telstra estimated the cost of upgrading its network to provide a minimum data speed of 33.6 kbps would cost $4.486 billion.[26] In its submission to this inquiry Telstra said that:

> Telstra notes that, at that time, such statistics led to a number of parties calling for the wholesale upgrade of the PSTN. The enormous cost of such an upgrade made these proposals unviable. Instead, the Commonwealth Government and Telstra set up the Internet Assistance Program – a joint initiative to help improve the experience of dial-up users of the Internet by addressing performance factors affecting speeds reasonable for common Internet usage.[27]

2.27 During questioning from members of the Environment, Communications, Information Technology and the Arts Legislation Committee an official from the Department of Communications, Information Technology and the Arts referred to the earlier figures discussed in the Telecommunications Service Inquiry report as the most recent independent costing.[28] In later evidence to that Committee Telstra stated that on the basis of some rough calculations it would cost at least $5 billion to substantially increase the minimum dial-up speed.[29]

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25 Telecommunications Service Inquiry, *Connecting Australia*, 2000, p 171 referring to the report of the Australian Communications Authority Digit Data Inquiry, 1998.

26 Telecommunications Service Inquiry, *Connecting Australia*, 2000, p 171.

27 Telstra, Submission 107, p 49.

28 Mr Chris Cheah, Chief General Manager – Telecommunications, Department of Communications, Information Technology and the Arts, Official Committee Hansard, Senate Environment, Communication, Information technology and the Arts Legislation Committee, Inquiry into the Telstra (Transition to Full Private Ownership) Bill 2003, 7 October 2003, p 30.

29 Mr John Stanhope, Chief Finance Officer and Group Managing Director, Finance and Administration, Telstra Corporation Ltd, Official Committee Hansard, Senate Environment, Communications, Information Technology and the Arts Legislation Committee, Inquiry into the Telstra (Transition to Full Private Ownership) Bill 2003, 2 October 2003, p 78.

Line dropouts

2.28 Another issue which was raised in relation to dial-up services is the prevalence and effect of line drop outs. Several submissions to the Committee commented on connection failures and the costs and frustration associated with frequent line dropouts:[30]

> Of late I have been finding that the cost of our Internet access has been increasing, primarily due to call drop-outs, as we are on a fixed monthly plan with BigPond.[31]

2.29 One submission from regional Queensland outlined the efforts of the authors, who are pensioners, to solve the line drop-out problem they were experiencing with their dial-up access. In their efforts to overcome line drop out problems they have, so far to no avail:

- changed ISP four times;
- changed modems twice;
- reformatted their computer;
- had many visits from local computer technicians;
- been visited many times by Telstra technicians;
- sought assistance from the Internet Assistance Program; and
- sought assistance from the Telecommunications Industry Ombudsman.[32]

2.30 The cause of line drop-outs is unclear but some of the rural users who made submissions to the Committee blamed low dial-up speeds:

> …. The quantity and quality of signal delivery over the current network often leads to loss of connection with the ISP due to errors or time-outs.[33]

> I probably averaged 10 or 20 calls a week from people asking, 'Why are we dropping out so much?' We had people ringing up and saying, 'We've been trying to get onto the Internet and it keeps dropping out. We've had 10 or 20 dial-ups to get something downloaded and we just can't get it on a regular basis.' Internet banking services were severely affected by these drop-outs when they came in. People were trying to dial up all the time and

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30 Guyra Shire Council, Submission 15; Parry Shire Council, Submission 23,

31 Mr Geoff Thompson, Thompson Consulting Engineers Pty Ltd, Submission 1, p 2.

32 R & P Patterson, Submission 13.

33 Ms Roslyn Joseph, Submission 32.

> dropping out, and then they got so frustrated with it they just gave it away. That dropping out and the frustration of not being able to get adequate service is where a lot of the problems come from.[34]

2.31 The IAP, and the 19.2 kbps licence condition imposed on Telstra, are directed at establishing a minimum connection speed. The IAP self-help site provides some information which may assist consumers with line drop out problems, however, currently there is no specific program aimed at addressing the issue of line drop outs.

Summary

2.32 The issue of dial-up speeds was clearly of concern to many witnesses. These concerns were linked in some cases to the desire to set higher minimum standards for dial-up access and to ensure that these issues were addressed before the full sale of Telstra:

> Progressively upgrade dial-in connections to a minimum standard of at least 48kbps, paying attention to those metropolitan, regional, remote and rural areas where the present standard falls short of basic service delivery;[35]

> PLEASE have our phone and Internet services up to scratch before you consider selling OUR phone company.[36]

2.33 Dial-up access to the Internet can provide an adequate service for many users and can be expected to remain the preferred method of connection for many users. However, the speed and reliability of these connections remain a problem for many users. While the efforts made to date to address the issue of speed have been of some assistance to some users, the evidence received by the Committee clearly shows that a dial-up speed of 19.2 kbps is not considered adequate by users, and that line drop out problems can be as important an issue as speed.

Higher speed data services

2.34 For many Australians dial up access to the Internet is unsatisfactory. The main reason for needing more speed is that many of the newer applications for the Internet, such as interactive gaming and downloading music, high resolution images and video files, are very data intensive:

> My clients now view broadband Internet speed as normal and regard my 56 Kbps dial-up connection speed as inadequate considering that I need to download large image files at times.[37]

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34 Mr Robert Jardine, Secretary/Treasurer, Ouyen Incorporated, 23 April 2003, p 350.

35 Mr Grahame Wilson, Submission 118, p 11.

36 R &P Patterson, Submission 13.

37 Helen Rix Graphic Design, Submission 127.

2.35 Other drawbacks with dial up access are that it ties up a telephone line while the consumer is online and response times can be relatively slow. The Department of the Senate IT section has estimated that a member of the public seeking to download a 1 MB submission through a standard dial-up connection would take about four minutes to do so. If the submission contained a 30 MB graphic, such as a photo, it would take 1½ to 2 hours to open!

2.36 Not every user of data services currently needs the higher speeds available through broadband, but the trend towards the need for faster services appears to be inexorable. There is a strong expectation in the community that access to higher speed services should be readily available and affordable and a view that economic development may be impeded by the lack of such access:

> Even some people in rural Victoria have access to broadband Internet access. Yet here I am in suburbia with absolutely no hope of upgrading from a prehistoric 56k up connection. Please help.[38]

> The inability to access bandwidth in key regional centres such as Townsville is of particular concern in Queensland, the only state in which a majority of residents reside outside the capital city. This situation is not only an impost to business growth but…also [of] considerable concern to successful development of this region.[39]

Definition of broadband

2.37 There is some debate about when a higher speed data service can be described as broadband, but it is usually defined in terms of its characteristics of high data speed, always on access and as a service which does not tie up the consumer's telephone line when it is being used. In infrastructure terms broadband is usually transmitted over a dedicated digital link over a copper line, coaxial cable, optical fibre, satellite or radio link, or a combination of these. Broadband can transmit large amounts of data, voice or video over long distances.

2.38 In the United States the Federal Communications Commission defines broadband as a data service operating at 200 kbps or more in at least one direction. The ACCC also uses this benchmark in its surveys of broadband access. The Department of Communications, Information Technology and the Arts states that broadband is more commonly associated with the speeds equal to or greater than those provided by Asymmetric Digital Subscriber Line (ADSL), although the Department notes that many commentators consider 'true broadband' to involve speeds of one megabit per second (mbps) or greater. Microsoft has its own definition of at least 300 kbps. In Australia 'broadband' is generally used to describe services which provide data speeds equal to, or faster than 256 kbps (the entry point download speed for ADSL).

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38 Mr David Fraser, Submission 22.

39 Townsville City Council, Submission 126, pp 14-15.

2.39 Higher speed services can be either symmetric (ISDN, VDSL) or asymmetric (ADSL). Symmetric services provide the same speed for uploading to the Internet as they do for downloading data from the Internet. This is the most suitable type of service for many businesses which have to upload significant amounts of data to the Internet. Home users of broadband usually download far more data from the Internet that they upload, and therefore may be better served by an asymmetric service which allows them to download at a much higher speed than they upload.

Digital subscriber line

2.40 Digital Subscriber Line (DSL) is a general term for a range of technologies which carry data-streams using digital signals over the copper lines. The most common of these technologies is Asymmetric Digital Subscriber Line (ADSL) which is used by telecommunication companies to provide high speed access to the Internet for home users and small businesses through their existing copper telephone lines. At the end of September 2003 there were 372,000 DSL subscriptions in Australia, an increase of 78% since the end of March 2003. DSL technologies account for 54% of all non dial-up subscriptions.[40]

2.41 Unfortunately ADSL is not universally available to all telephone users. There are a number of limitations which impede access to this service.

ADSL availability

2.42 Much of the existing copper network in Australia was primarily designed and built to carry voice services for the simple reason that data services were unheard of at the time of its initial development. Parts of the copper network are over 50 years old. The significance of the emergence of new technologies such as ADSL has been that they have allowed the capability of the otherwise dated copper network to be augmented to provide higher speed access to the Internet. However, as Telstra informed the Committee during its inquiry into competition in broadband services:

> I think it is right to suggest that ADSL is an interim technology. It is probably the last sweating…of the old copper network assets.[41]

2.43 Without such technological developments, higher speed access to the Internet would only be achievable by the construction of a parallel network, almost certainly based substantially on fibre optic cable on main routes, with a range of other technologies used to make the final link to the customer's premises. Several network providers in Australia have chosen that route, although results have been mixed. As an example, Optus constructed its own HFC cable network (see discussion of HFC below) to be accessible to 1.4 million homes in the major population centres of

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40 Australian Bureau of Statistics, *Internet Activity - September 2003*, Series 8153.0, p 4.

41 Dr Tony Warren, Telstra, Proof Committee Hansard, 12 November 2003, p 74.

Brisbane, Sydney and Melbourne. It drew the Committee's attention to the high cost of this approach with an uncertain outcome:

> Our position is that we think it is pretty unlikely that there will be additional expansion of the HFC network…The economic experience with the network was that it was very expensive to build and it has not generated an economic return.[42]

2.44 Accordingly, in November 2003 Optus chose to expand its ability to market its broadband services elsewhere by signing an agreement with Telstra for access to its wholesale DSL network so that it could conveniently access the 'last mile' copper network between Telstra exchanges and customer premises:

> …we are focusing our strategy on ways that we can provide services to the 80% of households that the [HFC] network does not service in other ways…the Telstra resale DSL service is one of those options that we are now commencing with as a means of servicing other parts of the population.[43]

2.45 However, there are a number of limitations on ADSL availability because of the characteristics of the existing copper network and the extent to which Telstra has installed the equipment needed for the provision of ADSL.

2.46 In order to provide ADSL over a subscriber's line the telephone exchange to which that line is connected must be enabled through the installation of a Digital Subscriber Line Access Multiplexer (DSLAM). Telstra has enabled all of its major exchanges which cover metropolitan areas and major regional centres but many of its smaller exchanges, which are typically in rural and regional areas, have not been enabled:

> I have tried unsuccessfully now for 3 years to obtain broadband services to my area from Telstra only to be told that the exchange at Castlereagh, my exchange, is not ADSL capable, but will be upgraded sometime in the future. However, when I ask for some sort of evidence that this might be the case they simply give the same 'mantra' as they do not have a forward work plan at all for the up-grade of the exchange? [44]
>
> ADSL services have been provided in the western part of the Shire in the towns of Gisborne, Kyneton and will soon be in place in Woodend. The level of telecommunication services fall away in the central and eastern sectors of the Shire. The townships of Riddells Creek, Macedon, Mt

42 Mr Paul Fletcher, Optus, Proof Committee Hansard, 13 November 2003, p 117.

43 ibid.

44 Councillor Paul Rasmussen, Hawkesbury Radio – 89.9 FM, Submission 6.

> Macedon, Romsey and Lancefield do not have adequate broadband services, such as ADSL.[45]

2.47 Concerns about access to ADSL are not confined to rural areas or to the impact of old infrastructure. The Committee heard evidence from a member of the Townsville City Council, Australia's 11th largest city, about the difficulties of accessing ADSL:

> ADSL broadband is currently inadequate across the city. Over 10 per cent of Townsville customers simply cannot get ADSL, due principally to network and technology constraints. The infrastructure installed by Telstra over the recent years has led to this situation.
>
> We have over 50 RIMs throughout Townsville, which are not compatible with ADSL, mostly in the newer subdivisions. Townville, being a rapidly growing provincial city, has a lot of people living in housing estates which have been developed in the last five, six, seven or eight years, and they do not have access to ADSL because of the installation of RIM technology.[46]

2.48 Telstra advised the Committee that it had already enabled or has plans to enable about 1,000 of its 5,058 exchanges. Telstra claims that those exchanges provide services to approximately 84 to 85 per cent of its customers. [47]

ADSL demand register

2.49 The Committee also examined how Telstra will determine what exchanges will be enabled in the future. Telstra has indicated that it now has a commercial focus on its ADSL roll-out based on demand and the cost structures within various areas[48]. Initially Telstra used information gathered from its web site to determine the level of demand:

> What we had prior to October was data that we were able to extract from what we call the mini SQ failure attempts. On the BigPond web site, customers lodge their phone number to see if they can get access to ADSL. Where those phone numbers were entered and they did not result in an exchange being enabled or there was a pair gain system or something preventing it, we were able to take that information and process it in some

45 Macedon Range Shire Council, Submission 33.

46 Councillor Ray Cloonan, Townsville City Council, Official Committee Hansard, 28 April 2003, p 431.

47 Mr Denis Mullane, Manager, BigPond Network Capability, Telstra, Proof Committee Hansard, 7 August 2003, p 884.

48 Ibid., p 899.

> way as to give us a proxy, if you like, for what we will get out of the demand register.[49]

2.50 In recognition that demand for broadband is growing rapidly, Telstra has now launched an ADSL demand register which will allow customers to register their interest in ADSL services.[50] Telstra will consider the demand for services at individual exchanges in deciding which exchange will be enabled in future. However, the Committee's inquiry found there was some confusion about what level of demand had to be demonstrated before an exchange would be enabled, and about the use of the earlier data gathered by Telstra.

2.51 One witness told the Committee that Telstra had advised it that the number varied from 20 customers to 50 customers.[51] Another witness believed that 150 potential customers were required.[52] This issue was raised with Telstra during estimates hearings. In evidence to the Committee Telstra has indicated that the level of interest recorded on the demand register which will trigger the enabling of an exchange depends on the economics of particular sites. At the time the issue was discussed Telstra had set thresholds on approximately 160 exchanges. If Telstra receives 60 registrations it will undertake the modelling work required to set a threshold for a particular exchange.[53]

> At the moment we have three different thresholds on the current register: 150, which is by far the majority of the ones that have been set to date; I think there are three at 225; and one exchange at 300, from memory.[54]

2.52 The Committee was told by one witness that Telstra had encouraged people to register their interest in broadband through its original mechanism but had later been told that since the introduction of the demand register 'that information can no longer be sourced'. The Committee raised this issue with Telstra who responded saying that:

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49 Mr Denis Mullane, Manager, BigPond Network Capability, Telstra, Senate Environment, Communications, Information Technology and the Arts Legislation Committee, Budget Estimates Supplementary Hearings, Official Committee Hansard, 3 November 2003, p 73.

50 Mr Denis Mullane, Manager, BigPond Network Capability, Telstra, Proof Committee Hansard, 7 August 2003, p. 885.

51 Mr Daren Kennaugh, IT Manager, Gilgandra Shire Council, Environment Communications, Information Technology and the Arts References Committee, inquiry into competition in broadband services, 1 October 2003, p 36.

52 Mr Christopher Lane, Chief Technical Officer, Coastalwatch Holdings Pty Ltd, Environment Communications, Information Technology and the Arts References Committee, inquiry into competition in broadband services, 2 February 2004, p 31.

53 Mr Denis Mullane, Manager, BigPond Network Capability, Telstra, Senate Environment, Communications, Information Technology and the Arts Legislation Committee, Budget Estimates Supplementary Hearings, Official Committee Hansard, 3 November 2003, p 73.

54 Ibid., p 73.

> Telstra's BigPond had a pre-existing system for gathering expressions of interest from customers wanting ADSL. This system is being maintained, however those expressions of interest are now being fed through to the Demand Register. Telstra Wholesale is also collecting information for the register from other participating ISP's customers via those ISP's.
>
> In relation to past expressions of interest, Telstra Wholesale has written to its ISP customers suggesting that they may like to include on the register recent expressions of interest that they have collected from their customers.
>
> BigPond plans to lodge on the register expressions of interest received in the last three months. Given that customer circumstances may have changed with the passing of time, those who lodged longer than three months ago will be contacted by email to see if they are still interested in a service, and in registering their interest.[55]

2.53 Telstra has also said that it sees the demand register as an internal tool for its own management purposes. During hearings Telstra was asked if it would make information on the register available to its competitors and, if not, how those competitors would know if there is sufficient demand to justify the installation of their own equipment in Telstra's exchanges. In response Telstra indicated that it would expect its competitors to do their own market research to determine the level of demand.[56]

2.54 In January 2004 Telstra announced that Loxton, in South Australia, will have its exchange upgraded to provide ADSL after more than 200 local businesses and residents registered for broadband using the Telstra ADSL Demand Register.[57]

2.55 In earlier evidence Telstra had indicated that the broadband demand register would be a two phase development which would, in the second phase, examine demand at the RIM level.[58] Telstra was also able to advise the Committee that new equipment may become available which will alter the cost structure for providing ADSL and may allow it to be made more widely available.

> I mentioned yesterday that we are at the very late stages of finalising a tender evaluation on DSLAM equipment. I have been advised that there is the high likelihood of some smaller capacity DSLAMs coming through that

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55 Telstra, Submission 144a, Senate Environment, Communications, Information Technology and the Arts Legislation Committee, Inquiry into the provisions of the Telstra (Transition to Full Private Ownership) Bill 2003.

56 Mr Bill Scales, Group Managing Director, Regulatory Corporate and Human Relations, Telstra, Proof Committee Hansard, 7 August 2003, p 893.

57 Telstra Corporation Limited, Media Release, 21 January 2004.

58 Mr Denis Mullane, Manager, BigPond Network Capability, Telstra, , Senate Environment, Communications, Information Technology and the Arts Legislation Committee, Consideration of Budget Estimates, Official Committee Hansard, 26 May 2003, p 185.

> process. So, yes, it has the potential to lower one cost component of the total ADSL provisioning equation. But I go back to the other point: you still have to have all the other aspects in place. Typically, the smaller the installation the higher the fixed costs of transmission links, power and other things become. There still needs to be a case by case economic evaluation. It ought to be slightly more favourable because the incremental cost of the DSLAM is lower but the cost per port will be a little higher.[59]

2.56 While Telstra's general approach to the future roll-out of ADSL may be reasonable in commercial terms, the Committee remains concerned about its impact in rural, regional and remote areas. This approach may result in many consumers in those areas facing delays before they can access ADSL, or possibly never gaining access to that technology. As one witness told the Committee it can be quite hard to get 150 people on a demand register in regional areas.[60] In the Committee's view access to affordable broadband should be available to every Australian.

ADSL technological limitations

2.57 Even if an exchange is enabled for ADSL, not all customers connected to the exchange will necessarily be able to obtain access. Signals carried on copper wires deteriorate depending upon the length of the line, the gauge and condition of the line, and the number and condition of any joints on that line. In the past the effect of this has been to limit the distance from the exchange at which ADSL can be offered to approximately 3.5 km:

> I could not believe the fact I live in a heavily populated suburb of Melbourne only 4kms from the telephone exchange and cannot get a broadband service.[61]

> Many telephone exchanges in rural areas do not have the capability to provide broadband at all. Those that do can only provide broadband services to subscribers at a limited distance from the exchange (3km is the maximum, I believe). This make it impossible for rural subscribers to receive this service.[62]

2.58 In January 2004 Telstra announced that new testing and investigation by Telstra Research Laboratories had shown that ADSL could be offered at greater distances from an exchange. Telstra said that the revised limit should extend ADSL coverage to

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59 Mr Denis Mullane, Manager, BigPond Network Capability, Telstra, Proof Committee Hansard, 7 August 2003, p 903.

60 Mr Christopher Lane, Chief Technical Officer, Coastalwatch Holdings Pty Ltd, Environment Communications, Information Technology and the Arts References Committee, inquiry into competition in broadband services, 2 February 2004, p 31.

61 Mr David Fraser, Submission 22.

62 Ms Roslyn Joseph, Submission 32.

at least 4 km in line distance from an ADSL enabled exchange, or further, depending on the cable type and the wire gauge. Telstra claimed that this would make ADSL available to an additional 400,000 telephone services and improve the current reach of ADSL from approximately 75 per cent of services to up to 90 per cent over the next three years.[63]

ADSL affordability

2.59 Witnesses also raised the issue of access to broadband services from an affordability perspective. Their main concerns relate to connection costs and the existence of download limits which make ADSL dearer in Australia than in comparable countries.[64] In response Telstra indicated that caps were used in Australia partly because of the immature stage of the market:

> So the reason we have caps in place is that we did not have an efficient means by which that allocation could be determined by individuals, partly because we are in a relatively immature period of the growth of this high-speed Internet, or broadband.[65]

2.60 Telstra also outlined some of the reasons that it claims lead it facing higher costs in providing broadband than telecommunications companies in other countries and went on to indicate that broadband costs could be expected to decline as volume increases:

> The main thing that I was going to point out today was the extensive nature of the long-distance multi-megabit bandwidth links that we have to a very large number of ADSL enabled exchanges. In a lot of the other countries, particularly those that are a lot smaller, those multi-megabit links are provided with raw fibre connections over relatively short distances. They do not have the expensive transmission links and the extensive optical fibre or radio routes and so on. There is a huge difference in the cost of that backbone network.[66]

2.61 The number of broadband services being provided by ADSL grow by 99.1% between June 2002 and June 2003.[67] Telstra advised the Committee that:

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63 Telstra Corporation Limited, Media Release, 19 January 2004.

64 Mr Robert Ardill and Mr Grant Roper, Submission 8; Mr Andrew Freeman, Submission 21;

65 Mr Bill Scales, Group Managing Director, Regulatory Corporate and Human Relations, Proof Committee Hansard, 7 August 2003, p 918.

66 Mr Denis Mullane, Manager, BigPond Network Capability, Telstra, Proof Committee Hansard, 7 August 2003, p 919.

67 Australian Competition and Consumer Commission, *Snap Shot of Broadband Deployment as at 30 June 2003*.

> 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.[68]

2.62 It is the consequence of such investments that the Committee is examining in its concurrent inquiry into competition in broadband services.

ADSL reliability

2.63 During the course of the inquiry the Committee noted media reports of problems with the quality and reliability of Telstra's ADSL service. These media reports were reflected in some of the submissions received by the Committee:

> Early adopters of DSL reported high levels of dissatisfaction with quality and reliability of service. Talk of class actions against Telstra for regular failings of its ADSL service reflects this - Telstra does not offer business customers guarantees on its service availability or quality (Shipton 2001). Broadband suppliers need to offer quality of service standards such as minimum level service agreements. [69]

2.64 In its submission to the Committee Telstra commented on these problems and the steps it had taken to increase customer confidence in the service:

> Early technical problems with the service an inevitable feature of all new technology platforms have been largely overcome. Telstra has also introduced ADSL Service Level Guarantees (SLG) to increase customer confidence in access reliability and reflect Telstra's confidence in the ADSL network. The SLGs that now apply to the availability performance of this network are as listed in the following chart.

97% < 99%	10% Monthly subscription fee Rebate
94% - <97%	20% Monthly subscription fee Rebate
<94%	50% Monthly subscription fee Rebate

> These SLGs, which are believed to be a world first, have been set up so that customers are automatically rebated in the event of a service disruption. This means the customer will be rebated regardless of whether they were aware of the outage.[70]

68 Telstra submission to the Committee's inquiry into competition in broadband services, submission 21, p 31.

69 Council on the Ageing (Australia), Submission 39, p 7.

70 Telstra Corporation Limited, Submission 107, p 59.

2.65 In evidence to the Committee the ACA confirmed that it does not monitor broadband or ADSL faults, although it is considering doing so.[71] In its submission Agile suggested that the National Reliability Framework should be extended to ADSL broadband services.[72] Given the growing importance of data services to both consumers and the economy the Committee believes that monitoring of service standards must extend to data services.

HFC cable

2.66 The generic term 'cable' is generally used to refer to a network of hybrid fibre coaxial cable through which pay TV services are provided to households. The networks consist of optical fibre on main routes, supplemented by coaxial cable closer to the customer's premises. These networks can also be used to provide Internet access with download speeds of 256-2000 kbps and upload speeds of 128 kbps. Unlike the way ADSL operates with an individual connection for each customer, cable users share access to the same HFC loop, meaning cable speeds can be affected when a large number of users are accessing the network at the same time. There are 215,400 cable broadband services connected in Australia.[73]

2.67 The biggest drawback with cable broadband is the limited extent of access to the existing cable networks:[74]

> When I contacted Telstra, they simply said "there is no cable in your area, so you can't be connected to either Foxtel cable TV or the Internet cable network".
>
> We had to pay $2,700 to have a satellite dish installed to receive Foxtel "cable" TV.[75]

2.68 Even where the physical infrastructure exists, access is not always available:

> Optus has a cable obtrusively erected on the power poles in front of our units. It is 1.5metres from the wall of the units and a conduit is in place where the cable can be installed. There is a communications room set aside for any equipment Optus may need to install and all units are already wired

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71 Dr Robert Horton and Mr John Neil, Australian Communications Authority, Committee Hansard, Senate Environment, Communications, Information Technology and the Arts Legislation Committee inquiry into the Provisions of the Telstra (Transition to Full Private Ownership) Bill 2003, 7 October 2003, p 46-47.

72 Agile Pty Ltd, Submission 136.

73 Australian Competition and Consumer Commission, *Snap Shot of Broadband Deployment as at 30 June 2003*.

74 The coverage of the existing cable networks is outlined in Chapter 1.

75 Mr Richard Millburn, Submission 2.

> back to the communications room. Optus will not even talk to us other than to say, "we don't connect to home units".[76]

2.69 The number of broadband services being provided by HFC cable grew by 52.9% between June 2002 and June 2003.[77]

ISDN

2.70 Integrated Services Digital Network (ISDN) is a reliable, well established technology for transmitting data. It is a digital alternative to an analogue public switched telephone service, which uses copper telephone lines to carry a 64 kbps data service. Telstra is currently marketing an 'ISDN Home' product which uses two ISDN lines to provide a 128 kbps service. This speed is lower than that which is generally accepted as falling into the definition of 'broadband' and the ACCC does not collect figures on ISDN in its Snap Shot of Broadband Deployment. But ISDN does have the advantage that it is significantly faster than dial-up access to the Internet. Higher speeds can be achieved by combining more ISDN lines but these services are generally only affordable by business users.

2.71 ISDN enjoys advantages over other technologies for some users. While cable and ADSL have significant limits on their availability, ISDN is available to 96 per cent of the Australian population. Because it is an older technology it is available to customers served by some pair gain systems which will not support ADSL and, with the use of repeaters, is available up to 20 kilometres from an exchange.[78] ISDN provides a symmetrical service which is more suitable than ADSL for customers who upload significant amounts of data to the Internet. Nevertheless some submitters to the Committee expressed concern that ISDN does not free up a phone line[79] and that it is relatively expensive.[80]

2.72 In its most recent publication on Internet activity the Australian Bureau of Statistics reported that the number of ISDN subscriptions had fallen from 16,000 at the end of March 2003 to 14,000 at the end of September 2003.[81]

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76 Mr Richard Millburn, Submission 2.

77 Australian Competition and Consumer Commission, *Snap Shot of Broadband Deployment as at 30 June 2003.*

78 Mr Don Pinel, Regional Managing Director, Telstra Country Wide Queensland and Denis Mullane, Manager, BigPond Network Capability, Telstra, Committee Hansard, 7 August 2003, pp 919-915.

79 Mr David Fraser, Submission 22.

80 Mid Murray Council, Submission 30.

81 Australian Bureau of Statistics, *Internet Activity - September 2003*, Series 8153.0, p 11.

Satellite

2.73 The most widely available method of gaining access to broadband technology is by satellite. Satellite broadband is available throughout Australia. It represents the most suitable technology in areas where population densities are very low. Satellites are radio relay stations in orbit above the Earth that receive, amplify and redirect radiocommunications signals.

2.74 There are three ways of accessing broadband by satellite.

- One-way satellite is the cheapest form of satellite access. It uses a satellite to download data at broadband speeds of up to 400 kbps but it depends on a dial-up connection over a fixed line to upload data to the Internet.
- A one-way satellite with an ISDN uplink provides a higher upload speed but is more expensive than one way satellite.
- Two-way satellite uses a satellite connection in both directions, but is relatively expensive. [82]

2.75 All of the satellites operated in Australian satellite slots are owned and managed by Optus, although transponders on those satellites are leased by other telecommunications companies. Some satellites operated from overseas can be used to provide services into Australia.

2.76 The principal drawback associated with satellite services is the cost. Satellite access involves higher upfront costs than other technologies and the ongoing cost of satellite access is usually higher than for other forms of broadband. Many submitters put the view to the Committee that satellite was not affordable:[83]

> Of course for a lot of money I could get a two-way satellite link – "faster" of course, but hardly falling into the category of "affordable".[84]
>
> A satellite system may soon become available from Optus, but has horrendous costs for very limited increase in speed - and NO promises from them either!!!.[85]

82 For a discussion of satellite download and upload speeds see Proof Committee Hansard, 7 August 2003, p 927-929.

83 Break O'Day Council, Submission 11; King Island Council, Submission 19; Midac Technologies Australia Pty Limited, Submission 20; Roslyn Joseph, Submission 32.

84 Mr Geoff Thompson, Thompson Consulting Engineers Pty Ltd, Submission 1, p 2.

85 Councillor Paul Rasmussen, Hawkesbury Radio – 89.9 FM, Submission 6.

> I rang Foxtel and asked to be connected to the satellite Internet network, but alas again, it requires another dish as it is a different satellite which controls the Internet network. We can't afford another dish.[86]
>
> To have the same Internet speed as the rest of the civilised world also costs a premium. We cannot get normal broadband cable so it requires us to install a satellite to use in conjunction with a up connection. This service (according to Telstra's web site) costs $218.90 for installation, $70.95 a month plus up costs. The 2 way satellite service costs $399 installation, $699 hardware and at least $120 a month for the subscription. On the other hand, people just around the corner only have to pay for a cable broadband service which costs $259 for installation and then $54.95 a month with no dial up costs. This is an outrageous difference.[87]

2.77 Another issue for potential satellite users is latency. Unlike terrestrial services, data transmitted to a satellite has to be beamed up to the satellite and back to an earth station before being fed into the terrestrial telecommunications network. This causes a small but sometimes noticeable delay in the transmission:

> While initially satellite looked to be a great solution to Australia's vastly spread population, it was soon realised the technology's greatest enemy was price and the fact it was not suited to many applications sensitive to latency (delay). Such applications involving time sensitive data and multiplayer games could not be used across the satellite service. For these reasons satellite is not a popular choice.[88]

Mobile phone and wireless

2.78 Wireless networks can provide high speed data transmission by using radio waves instead of fixed lines. There is a wide range of wireless technologies which can provide data services, the most common of which are the mobile phone technologies.

2.79 Existing second generation GMS and CDMA mobile phone systems provide low speed data rates of around 9.6 to 14.4 kbps. Higher speeds will be possible as these networks are upgraded. Existing narrowband 2G digital mobile phone networks can support data rates of up to 384 kbps although in practice speeds of 32-64 kbps are expected. 3G technologies offer the prospect of data transmission rates of up to 2 mbps for low mobility indoor applications. The most recent Australian Bureau of Statistics report on Internet activity identified only 3,000 mobile wireless Internet subscriptions.[89]

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86 Mr Richard Millburn, Submission 2.

87 Mr Brian Ready, Submission 94.

88 Mr Robert Ardill and Mr Grant Roper, Submission 8, p 8.

89 Australian Bureau of Statistics, *Internet Activity - September 2003*, Series 8153.0, p 11.

2.80 Wireless local area networks (WLAN) use low powered transmissions on class licensed spectrum[90] to transmit data over distances of 50 to 150 metres. They usually operate on the IEEE 802.11b or related standards which are capable of providing data rates of 1-2 mbps. WLANs can be used by consumers to establish their own local networks to connect devices in their own home or to other computer users nearby. They are also used by commercial operators to establish hotspots in public areas such as airports, hotels, cafes and convention centres. To connect to the Internet the wireless base station must have a connection using some other technology such as ADSL.

2.81 Wireless local loop (WLL) networks use radio access technology to link a customer to a local exchange or service provider. They can be used to provide broadband access to customers over a range of up to 40km and are particularly suited for use in large facilities or in regional areas.

2.82 To date wireless technologies have not played a significant role in providing access to data services in Australia. The second generation mobile phone networks provide only low data rates. Australia's only 3G network was not launched until April 2003 and has only 50,000 subscribers.[91] Several companies have installed WLAN hotspots but this is a recent development and the technology is not in widespread use. Similarly, although some WLL networks have been installed there has been no widespread take-up of this technology.

2.83 The deliberations of the House of Representatives Standing Committee on Communications, Information Technology and the Arts inquiry into wireless broadband are outlined in Appendix 5. It is appropriate to reiterate its key conclusion 'that no wireless broadband technology is able to handle the data rates of the best wire-line technologies…the solution to the "last mile" service involves a mixture of technologies, both wire-line and wireless.'[92]

Other network architectures

2.84 The TransAct network, discussed in Chapter 1, uses DSL technology to provide the final connection to the customer. For residential customers the technology currently supports the delivery of a total of 36 mbps downstream and 1 mbps upstream. Home users are offered a range of broadband speeds up to 2 mbps/256 kbps. For business customers, symmetrical capacity can be provided at speeds of up to 13 mbps.

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90 Class licensed spectrum can be used by anyone, without the need to obtain a licence, provided that they operate in compliance with the class licence.

91 Hutchinson Telecoms, Media Release 5 August 2003, updated by AAP article of 2 January 2004, published in Herald Sun on 3 January 2004 as '*Another tough year for Telstra.*

92 House of Representatives Standing Committee on Communications, Information Technology and the Arts, *Connecting Australia! Wireless Broadband,* November 2002, p. xi.

2.85 Bright Communications, in Western Australia, has trialled both fibre to the home and fibre to the kerb technologies and provides a variety of packages for home users offering speeds of up to 1mbps/256 kbps, and for business users a symmetrical service of up to 2 mbps. Telstra has also flagged its intention to work with property developers on a major trial of fibre-to-the-home technology in the near future.[93]

2.86 A variety of other technologies for delivering broadband are being developed or trialled. The most commonly discussed technologies use existing electricity supply networks to deliver digital data services. These technologies are described as powerline communications (PLC), powerline telecommunications (PLT) systems or broadband powerline (BPL) systems. The new broadband systems provide data rates of 4-20 mbps:[94]

> PLC systems consist of terminal devices that are plugged into or attached to the electrical power supply network and allow data to be transmitted via the network to other terminal devices plugged into or attached to the network. The use of existing electrical power supply network wiring reduces costs and provides convenient access to broadband interconnection between devices.[95]

2.87 In a recent background paper the ACA noted that several European countries have adopted their own requirements for powerline communications systems and that there are a growing number of systems already being deployed in Europe and surrounding countries to provide last-mile broadband services.[96] The paper identified a range of issues arising out of the possible use of these technologies in Australia and the differences between the power supply network in Australia and those used overseas. These issues relate to:

- compatibility between private and public networks;
- telecommunications policy issues; and
- radiocommunications interference issues.[97]

2.88 In its summary the ACA said that:

> Significantly, differences between the Australian powerline environment and overseas countries developing standards for broadband powerline

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93 *The Australian*, breaking news Internet page, 30 March 2004.

94 Australian Communications Authority, *Broadband Powerline Communications Systems – A Background Brief*, September 2003, p 2.

95 ibid.

96 ibid., p 12.

97 ibid., p 7.

> communications systems might lead to "safe" limits in those countries being "unsafe" in the Australian context. This area would seem to need further investigation. In due course, developments in the UK might provide a valuable guide, because of the apparent similarities in the AC power supply networks of the two countries. However, there is a risk that overseas findings (and therefore standards' limits) might not be directly transferable into this country.[98]

2.89 The ACA stated that terminal devices for in-house applications have recently begun to be marketed in Australian and that an electrical supply authority has approached the ACA recently about the conduct of trials of equipment for last-mile applications.[99] However, it seems unlikely that this technology will become generally available to Australian consumers in the near future.

Cost of broadband

2.90 The price of broadband in Australia has frequently been criticised on the grounds that it is far more expensive than in comparable countries. The then National Office for the Information Economy, quoting Australian Bureau of Statistics figures, identified the high cost of access to the Internet as the main reason for households not having Internet access.[100] One reason given for the high cost of broadband in Australia was the very high cost of high capacity links:

> A major cause for the high cost of broadband services is the cost of high capacity links. By comparison with other countries Australia has high tariffs for network capacity as shown by the graph in Appendix A. A number of small carriers have indicated that the first major drop in broadband prices (from more than $150.00 to approximately $100.00 per month) was due to Telstra dropping the cost of backhaul circuits.[101]

2.91 In early 2004 Telstra significantly cut its charges for ADSL. At the time of finalising this report the full effect of this change in prices was not clear. Telstra's competitors and the ACCC have raised concerns that wholesale prices have not fallen by a similar amount and that Telstra may be engaging in anti-competitive behaviour. These issues are the subject of ongoing discussions and their long term impact on pricing and competition in the broadband market is unclear.

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98 Australian Communications Authority, *Broadband Powerline Communications Systems – A Background Brief*, September 2003, p 16.

99 ibid., p 14.

100 National Office of the Internet Economy, *The Current State of Play – Online Participation and Activities*, 2003, p 10.

101 Communications Expert Group Pty Ltd, Inquiry into Competition in Broadband Services, Submission 30.

Summary

2.92 Higher speed data services are available through a variety of technologies throughout Australia, but there is considerable variation in the broadband options and prices in different areas. In parts of some capital cities consumers have the choice of ADSL, cable, ISDN or satellite. In other parts of the same cities they are limited to more expensive ISDN or satellite because cable is not available and their fixed line connection will not support ADSL. In some rural and remote areas consumers are limited to satellite. Decisions about the roll-out of broadband in Australia have largely been made on the basis of commercial considerations and the resulting lack of uniform access to affordable broadband is a source of frustration to many consumers:

> Senator Alston's comments that it is a commercial decision not to supply service to me and my family is not on in the year 2002.
>
> Please go into bat for the little people like me who are discriminated against because we live in a home unit. Telstra should be giving service just as Optus should, not making commercial decisions not to serve the public who owns at least 50% of Telstra.
>
> What type of commercial decisions will Telstra make if they become private?[102]

2.93 A common theme in the evidence to the Committee was that consumers in rural, regional and remote areas need to have the same level of access to the Internet as those in the capital cities:

> We need to be able to have very similar, if not the same, level of Internet access available in the country as in the capital cities. This also needs to be at a similar cost if we are to be competitive with our city cousins.[103]
>
> I firmly believe that, with regional situation such as Dungog, uncapped broadband (speed) capabilities could provide enormous economic stimulation to the area.[104]
>
> More than anybody persons living in rural and remote areas need access to modern telecommunications services. Access to modern Broadband services could not only provide security and peace of mind to persons, but it could also be a major lifestyle improvement. However at this time the provision of these services at a comparable cost to persons living in the cities appears unlikely.[105]

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102 Mr Richard Millburn, Submission 2.

103 Mr Geoff Thompson, Thompson Consulting Engineers Pty Ltd, Submission 1, p 2.

104 Midac Technologies (Australia) Pty Limited, Submission 20.

105 Hay Shire Council, Submission 17. See also Orana Development Board, Submission 42.

> We submit broadband should be regarded as a commodity similar to water and power therefore justifying some form of cross subsidisation to ensure competitive services are provided in the rural areas.[106]

2.94 The frustration of country residents is often shared by their city counterparts who might have no access to a terrestrial broadband service even though neighbouring suburbs have access to more than one technology. A Perth resident lamented the fact that residents in the suburb of City Beach have no access to broadband while those in the nearby suburb of Crawley have access to cable TV, cable broadband and ADSL.[107]

2.95 The frustration many consumers experience as a result of their inability to obtain access to affordable broadband appears to be aggravated by Telstra heavily advertising services which they are unable to access.[108]

2.96 The cost of broadband is also seen as an impediment to the more rapid take-up of broadband in Australia, as are the pricing structures. The lack of clarity in acceptable user plans[109] and the use of download caps are also seen as impediments to the take-up of broadband:

> The current pricing structure where service is capped at 3gig by the two seemingly main providers where additional megabytes are charged at exorbitant rates by Telstra or being throttled to 28.8kbps modem speed by Optus could hardly be called a step forward and don't inspire the average Australian to connect to the Internet via broadband as they would in other developed countries with affordable connections such as the UK or the US.[110]

2.97 The evidence received by the Committee clearly shows that access to affordable broadband services is viewed as an essential service and that this service is not being delivered to all of the people of Australia. The Government's National Broadband Strategy will help to address this issue by making broadband more available and affordable for some consumers. However the Committee does not believe that it represents a comprehensive solution to the problems identified by this inquiry because:

- the programs are only funded for four years; and

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106 Yarriambiack Shire Council, Submission 12.

107 Mr Rodney Bradley, Submission 9.

108 Mr Geoff Thompson, Thompson Consulting Engineers Pty Ltd, Submission 1, p 2; Break O'Day Council, Submission 11.

109 Mr Steve Judd, Submission 4.

110 Mr A Priede, Submission 3.

- the funding is limited and will probably only assist a small number of users.

2.98 The Government's various access programs are discussed in more detail in Chapter 4 of this report which also discusses the 'doughnut' of poorer service areas created by Government programs aimed exclusively at the most disadvantaged geographic areas.

2.99 In the Committee's view, the Government's piecemeal approach to data services is unlikely to meet the needs of the community and may act as an impediment to Australia's economic development. Access to fast, affordable, reliable data services should be accorded the same importance as access to voice services.

Pair gain systems

2.100 Pair gain systems are a significant impediment to the delivery of the full range of modern telecommunication services to many consumers.

2.101 Pair gain systems enable multiple standard telephone services to be carried over a smaller number of transmission links. They are employed throughout the Telstra network wherever there are insufficient copper pairs to meet the current demand for services. Telstra currently uses 16 pair gain systems which range from small units which allow two telephone services to be operated over a single pair of copper wires to large systems which allow up to 480 standard telephone services to be provided by connecting them to an exchange over single optical fibre cable. The advantage of a pair gain system is that it offers a cost effective alternative to laying additional copper cable where the existing infrastructure is inadequate.

2.102 Most pair gain systems are not able to provide the full range and standard of services which can be delivered over a normal copper pair. Restrictions on the standards of service imposed by various pair gain systems include:

- inability to support features such as calling number display and faxstream;
- possible inability to obtain a line when it is wanted; and
- restrictions on data speeds and access to broadband.

Access to voice services

2.103 One type of pair gain system - 16/96 - is used to provide up to 96 telephone systems by switching calls through only 16 copper pairs. The Tasmanian CEPU made the point that with this system, if eight of the 96 customers on such a system were to phone another eight customers connected to the system that would exhaust the available capacity leaving up to 80 customers without access to a telephone service.[111]

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111 Communications, Electrical and Plumbing Union, Tasmanian Communications Branches, Submission 133, p 5.

In its submission the CEPU Tasmanian Communications Branches identified 12 areas where pair gain systems were affected by congestion but where there was no known relief in either funding or other action to ameliorate the situation.

2.104 Similar congestion problems were reported in relation to the number of transmission lines available at Digital Radio Concentrator Systems (DRCS) exchanges.[112] It should be noted that DRCS is a solar powered communications system designed by Telstra for voice and very low speed data applications in remote areas but, as an ageing technology, is currently being replaced under Telstra's Remote Areas Telecommunications Enhancement program (RATE) with High Capacity Digital Radio Concentrator Systems (HCRC).

2.105 In some cases customers obtain a second telephone connection to provide a separate line for a fax or Internet connection, or to reduce reliance on a single line in case of emergency. Some customers in this situation are perturbed to subsequently discover that their second line has been connected through a pair gain system which leaves them with the same inadequate or vulnerable service which they were hoping to avoid by having a second line connected. In effect they are paying the full price for two lines but receiving two inadequate services using the same line:

> My new service took twice as long to install as they said and was connected to a RAM 8 system at that stage I had no idea what that was but I soon found out. As both my lines run off the same RAM 8 if there is ever a problem with this unit both my lines are out of action.
>
> It appears that because my service is so far from the exchange this RAM 8 needs a battery back up somewhere between the unit and the exchange they seem to record where they put the RAM 8s but the service personnel state that there are hundreds in my area and no record of the battery locations has ever been kept. Thus if there is a problem they could look at hundreds of batteries not knowing which one is attached to which RAM 8. My phone service has since this RAM 8 was installed continually cut in and out and unless I actually go to use the phone I do not know if it is working or not.[113]

2.106 The Boulding case[114] is one of the more notorious examples of the pitfalls of pair gains. The Boulding family had requested a second line to their home to ensure that they had a reliable service in case of an emergency, although Telstra's records show that Telstra understood that the second line was requested to provide an Internet connection. Telstra installed the second line by using a Telespect 2 Digital Pair Gain

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112 Three Rivers Landcare Group, Submission 56; Ewan Community North Queensland, Submission 57; Hidden Valley Community, Submission 58; Upper Burdekin Progress Association, Submission 59.

113 Mr Peter Kane, Submission 29.

114 Detailed in Appendix 5.

System which used a digital signal transmitted along the single copper pair serving the Boulding residence to provide both services to that home.

2.107 Although the actual cause of the fault on the day of Sam Boulding's fatal asthma attack has not been identified, an investigation into the telephone services provided to the Boulding family was critical of the use of a pair gain system on that line:

> The technical characteristics of the Kergunyah customer access network (CAN) infrastructure, in combination with the digital pair gain system providing services to the Boulding family, were not conducive to long-term reliable service in this instance. These technical characteristics around the time of January 2002 were not consistent with those recommended by Telstra for the type of electronic equipment installed on this infrastructure.[115]

Dial up speeds

2.108 Pair gain systems also impact on dial-up access speeds on fixed line networks. In evidence to the Committee about the general impact of these systems, Telstra stated that:

> The main issue is that the broad delivery of service is really not impacted upon. Some aspects of services, as we all know, are impacted on to some extent - for example, different generations of pair gain equipment can have an impact on dial-up data speeds, but that also is a very complex area and depends on the length of lines, type of pair gain equipment and so on. By and large, you can still operate dial-up data through pair gain systems, but you get some slightly different performance outcomes, depending on the particular type of system.[116]

2.109 Telstra provided the Committee with the following table showing the capability of various pair gain systems.

115 Australian Communications Authority, Investigation into the provision and maintenance of telephone services to the Boulding family in Kergunyah, north-eastern Victoria, March 2002, p. 6.

116 Mr Dennis Mullane, Manager, BigPond Network Capability, Committee Hansard, 7 August 2003, p 859.

Telstra Rural and Remote Access Technologies

(Last Updated 2002)

			Homeline Product Features *(2*)*									
Infrastructure Platform	**Description**	**Dial-up Data Rate*(1*)***	**Call-Waiting**	**Call-Forward *(9*)***	**Call-Barring**	**Call Return *10#**	**3-way Chat**	**Call Back Busy**	**Calling Number Display (CND)**	**CND-Blocking**	**Faxstream Duet**	**Message-bank Home**
RADIO CONCENTRATORS, POINT-TO-POINT RADIO and FIXED WIRELESSACCESS												
Analogue Radio Concentrator System (ARCS)	8 channel analogue radio concentrator (150 MHz)	up to 4.8 Kbps	N	Y	Y	Y	N	N	N	Y	N	Y
Digital Radio Concentrator System (DRCS)	15 channel point-to-multipoint radio concentrator (500 and 1500 MHz)	up to 7.2 Kbps	N	Y	Y	Y	N	N	N	Y	N	Y
High Capacity Radio Concentrator IRT2000 V9.2	TDMA point-to-multipoint radio concentrator system operating in the 500 MHz and 1500 MHz bands Up to 30 VF or data channels.	up to 26.4 Kbps	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
High Capacity Radio Concentrator IRT2000 V10.3 (equipped with ERS-C customer end)	TDMA point-to-multipoint radio concentrator system (500 MHz and 1500 MHz bands); Up to 60 simultaneous VF channels or up to 30 simultaneous data channels or a mix thereof.	up to 26.4 Kbps	Y	Y	Y	Y	Y	Y	Y*(6*)*	Y	Y	Y
High Capacity Radio Concentrator SWING V3.1	TDMA point-to-multipoint radio concentrator system (500 MHz and 1500 MHz bands); Up to 60 simultaneous VF channels or up to 30 simultaneous data channels or a mix thereof.	up to 26.4 Kbps	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Single Channel Analogue Radio (SCARS)	Single channel point to point analogue radio. (150MHz and 400MHz)	up to 16.8 Kbps claimed	N	Y	Y	Y	N	N	N	Y	N	Y
NA100 Dual Channel Analogue Radio System (DCARS)	Dual channel point to point analogue radio. (150MHz and 400 MHz)	up to 9.6 Kbps	N	Y	Y	Y	N	N	N	Y	N	Y
SR210/310 Dual Channel Analogue Radio System (DCARS)	Dual channel point to point analogue radio. (150 MHz and 400 MHz)	up to 14.4 Kbps	N	Y	Y	Y	N	N	N	Y	N	Y
Hawk version 1 Dual Channel Analogue Radio System (DCARS)	Dual channel point to point analogue radio. (150 MHz, 400 and 450 MHz)	up to 19.2 Kbps	Y	Y	Y	Y	Y	Y	N	Y	N	Y
Hawk version 2 Dual Channel Analogue Radio System (DCARS)	Dual channel point to point analogue radio. (150MHz, 400 ,and 450 MHz)	up to 19.2 Kbps	Y	Y	Y	Y	Y	Y	Y*(7*)*	Y	N	Y
Multichannel Analogue Radio System (MCARS)	6 channel point to point analogue radio (400 MHz & 900 MHz)	up to 14.4 Kbps	N	Y	Y	Y	Y	Y	N	Y	N	Y

			Homeline Product Features *(2*)*									
Infrastructure Platform	**Description**	**Dial-up Data Rate *(1*)***	**Call-Waiting**	**Call-Forward *(9*)***	**Call-Barring**	**3-way Chat**	**Call Back Busy**	**Call Back Busy**	**Calling Number Display (CND)**	**CND-Blocking**	**Faxstream Duet**	**Message - bank Home**
Multichannel Digital Radio System (MCDRS) DXR200	Point-to-point non concentrating digital multi-channel customer radio system sourced through NEC Australia but -manufactured by MAS Technology (NZ) (400 MHz, 900 MHz & 1500MHz)	up to 26.4 Kbps (with 64 Kbps encoding)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
CDMA Wireless Local Loop	WLL platform using CDMA base stations with a V5.2 switch interface from the Base Station Controller to the PSTN switch. (under development) (800 MHz)	up to 14.4 Kbps	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Fixed Radio Access (FRA)	Nortel Proximity I TDMA WLL system operating in 3.4 GHz band	up to 46.6 Kbps	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SATELLITE SYSTEMS												
USO Satellite Telephony (USOSat)	VSAT DAMA satellite telephony service - off PAS2	up to 28.8 Kbps *(8*)*	N	Y	Y	N	N	N	N	Y	N	Y
RSS via Satellite	AXE RSS with satellite transmission - off PAS2	up to 9.6 Kbps	Y	Y	Y				Y	Y		
IPSTS(MiniSat)	Interim telephone service using MiniSat technology on the Inmarsat satellite platform	up to 2.4 Kbps	N	N	N*(5*)*	N	N	N	N	N	N	N
SMALL PAIR GAIN SYSTEMS												
Analogue Network Termination (ANT1)	Allows an ETSI Basic Rate service (OnRamp) to provide two analogue PSTN lines over one copper pair; used for2nd line (both services to same customer)	up to 50 Kbps	Y	Y	Y	N	N	N	Y	Y	N	N
1+1 FM Carrier system	Uses FDM to combine a normal VF telephone service (physical service) with an extra service (carrier service) provided via an FM carrier service	up to 26.4 up to 9.6 on derived channel	Y	Y	Y	Y	Y	Y	N*(13*)*	Y	N*(13*)*	Y
2 channel Digital Pair Gain System (2 DPGS)	Uses digital multiplexing to provide two telephone services over one physical cable pair - reactive solution (2B1Q DSL bearer = 2x64Kbps VF)	up to 19.2 Kbps Rel1 up to 28.8 Kbps Rel2	Y	Y	Y	Y	Y	Y	Y*(4*)*	Y	Y*(4*)*	Y

			Homeline Product Features *(2*)*									
Infrastructure Platform	**Description**	**Dial-up Data Rate *(1*)***	**Call-Waiting**	**Call-Forward *(9*)***	**Call-Barring**	**3-way Chat**	**Call Back Busy**	**Call Back Busy**	**Calling Number Display (CND)**	**CND-Blocking**	**Faxstream Duet**	**Message - bank Home**
4 channel Digital Pair Gain System (4 DPGS) - Phase 1	Uses digital multiplexing to provide four telephone services over one physical cable pair	up to 7.2 Kbps	Y	Y	Y	Y	Y	Y	N	Y	*Y(4*)*	Y
4 channel Digital Pair Gain System (4 DPGS) - Phase 2	Uses digital multiplexing to provide four tel servs over one physical cable pair - reactive solution (4B3T DSL bearer = 4x32Kbps ADPCM VF)	up to 7.2 Kbps	Y	Y	Y	Y	Y	Y	*Y(3*)(4*)*	Y	*Y(4*)*	Y
Rural Access Multiplexer Phase 1 (RAM Ph1)	8 channel pair gain system (2 x 160Kbps 2B1Q)	up to 26.4 Kbps	Y	Y	Y	Y	Y	Y	*Y(4*)*	Y	*Y(4*)*	Y
Rural Access Multiplexer Phase 2 (RAM Ph2)	8 channel pair gain system (1 x 528Kbps xDSL) 8 channel pair gain system (2 x 272Kbps xDSL)	up to 28.8 Kbps	Y	Y	Y	Y	Y	Y	*Y(4*)*	Y	*Y(4*)*	Y
MEDIUM PAIR GAIN SYSTEMS												
Mini Line Concentrator (MLC) 14/5	Up to 14 services over 5 cable pairs (trunks)	up to 50 Kbps	Y	Y	Y	Y	Y	Y	*Y(4*)(10*)*	Y	*Y(4)(11*)*	
Mini Line Concentrator (MLC) 15/6	Share up to five cable pairs (trunks) to provide up 15 services. A sixth trunk provides the power feed & data communications to the remote unit.	up to 50 Kbps	Y	Y	Y	Y	Y	Y	*Y(4*)(10*)*	Y	*Y(4)(11*)*	Y
Mini Line Concentrator (MLC) 16/6	Share up to five cable pairs (trunks) to provide up 16 services. A sixth trunk provides the power feed & data communications to the remote unit.	up to 50 Kbps	Y	Y	Y	Y	Y	Y	*Y(4*)(10*)*	Y	*Y(4)(11*)*	Y
LARGE PAIR GAIN SYSTEMS												
Large Line Concentrator (LLC) - 16/96	Combine a number of Extel MLCs via an extra switching stage (E2SS and R2SS) to provide up to 96 services over 15 trunks. 16th trunk used for data and power supply.	up to 50 Kbps	Y	Y	Y	Y	Y	Y	*Y(4*)(10*)*	Y	*Y(4*)(11*)*	Y
Remote Customer Multiplexer (RCM)	Multiplexes up to 30 tel services over a standard 2 Mbps digital link (4W, optical or radio)	up to 26.4 Kbps	Y	Y	Y	Y	Y	Y	N	Y	*Y(4*)*	Y

			Homeline Product Features *(2*)*									
Infrastructure Platform	**Description**	**Dial-up Data Rate *(1*)***	**Call-Waiting**	**Call-Forward *(9*)***	**Call-Barring**	**3-way Chat**	**Call Back Busy**	**Call Back Busy**	**Calling Number Display (CND)**	**CND-Blocking**	**Faxstream Duet**	**Message - bank Home**
Digital Concentrator System (DCS-20)	Provides up to 120 services; Central Unit and Remote Unit interconnected by a variety of transmission schemes: cable pairs, 2Mbps PCM over copper, fibre or radio.	up to 26.4 Kbps	Y	Y	Y	Y	Y	Y	N	Y	*Y(4*)(11*)*	Y
Remote Integrated Multiplexer (RIM)	Provides up to 480 services over a number of standard 2 Mbps digital links to a maximum 34 Mbps. Integrated RIM - connects directly to the exchange via the digital links: Non-integrated RIM - indirectly connected to an exchange via the MDF using 2 wire circuits.	up to 26.4 Kbps (non-int.) up to 50 Kbps (int)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Small Capacity Distributed System (SCaDS with O/F)	SCaDS is a digital pair gain system that can support up to 30 POTS or 12 ISDN services or a mix. Up to 6 cascaded remote units on a single bi-directional optical fibre bearer up to a maximum distance of 30km for each remote unit	up to 28.8 Kbps	Y	Y	Y	Y	Y	Y	*Y(4*)*	Y	*Y(4*)*	Y
SCaDS with G703 interface	Allows SCaDS to use existing G703 2 Mbps transmission capacity (including digital radio)	up to 28.8 Kbps	Y	Y	Y	Y	Y	Y	*Y(4*)*	Y	*Y(4*)*	Y

(1) = Data rate capability not throughput. The numbers outlined here are indicative only. Factors influencing data speed include: distance of customer from their exchange; technology employed; quality of lines and interference encountered (noise levels, impedance matching); environmental factors; customer equipment (modem type, computer set-up, other equipment on the line); and carrier and ISP used by the customer (server capacity, compression techniques employed).

(2) = Product features may not be supported due to technology constraints, or when the technology is concatenated to another access technology.

(3) = CND inhibited after power fail fault until B-party has lifted off

(4) = Distinctive ring works satisfactorily provided PGS is not concatenated to another PGS, ie that has been used as an exchange replacement, eg RCM, DCS20, NIRIM.'

(5) = Call barring possible on IPSTS(MiniSat) during terminal set-up but cannot be changed remotely (of availability to be confirmed by Vendor.

6) = Calling Number Display will only function on ERS and ERS-C equipment. System software V10.3 or later must be used. Although Microstations and HBD equipment can be used with V10 systems CND will not work on Microstations or HBD terminal and repeaters.

(7) = Date (8) = Default data rate set at 14.4 Kbps; 28.8 kbps enabled with *28 prefix

(9) = EasyCall Call Forward includes Call Forward Immediate, Busy and No Answer

(10) = CND may not be passed to B-Party on unanswered call where concentrator is congested.

(11) = First ring cadence is corrupt

(12) = Untested

(13) = Untested

2.110 As the preceding table shows, some pair gain systems effectively limited dial-up speeds to 7.2 kbps while many others, including the common early Remote Integrated Multiplexers (RIMs) limited dial-up speeds to around 26.4 kbps.[117] It was explained to the Committee that these limitations often relate to the number of analogue to digital conversions which occur when older systems are being used:

> … the bigger issue that impacts on data speeds is this factor of analogue-to-digital conversions that you get when you go through some of the access network electronics. Each time you go through an analogue-to-digital conversion you limit the achievable dial-up speeds. So if you have two conversions you are generally down to around the 30- to 28-kilobit per second level.
>
> Most of the pair gain systems that we have used for many years have those two analogue-to-digital conversions. The way we have approached that issue is that, with the advent of the Internet assistance program, we are advising customers to access that program. If they have issues around the data speed then they can be brought up to the achievable levels that they need by case-by-case attention. That is working quite well. We are actually achieving quite a lot of very positive outcomes for customers who go through the centre.118

2.111 Telstra also advised that the RAM 8 phase 3 pair gains system would soon enter service. This system will offer 50 kilobit per second dial-up speeds and will be an important tool in further targeting some of the existing concentrator systems.[119]

2.112 The issue of whether customers whose dial-up speed was limited by a pair gain system should be paying less for their service was raised with representatives of the Consumer Telecommunications Network:

> I think they should be. That is absolutely the case because it is quite clear they are never going to get something faster. I must admit that I was a little bit disappointed with the recommendation in the Estens report that the guaranteed speed be 19.2 kilobytes per second, especially considering that the standard modem for dial-up even is a 56K modem. The reality is that we know most of those modems are not going to get 56K and we can accept that, but perhaps 33.6 might be a more realistic speed that we are looking at. At least at that point you can guarantee to get decent email with some

117 Telstra Corporation Limited, Submission 107D.

118 Mr Denis Mullane, Manager, BigPond Network Capability, Telstra, Committee Hansard, 7 August 2003, p 934.

119 ibid., p 923.

> attachments, which is a bare bones basic service that you should be able to expect from an Internet service in Australia.[120]

Access to broadband

2.113 The use of pair gains systems in the Telstra network also significantly impacts on the availability of ADSL. Telstra told the Committee that about 900,000 telephone services are currently provided through a RIM. Of those services, approximately 70 per cent are connected through exchanges which are ADSL enabled.[121] A significant number of Telstra customers are therefore unable to access ADSL services even though their exchange is ADSL enabled:

> Ozemail informed me that they regrettably can't provide a service as my new phone line was not put in by adding new copper pairs as I was informed, but by using a RIM system which is incompatible with ADSL. At no time was I informed by Telstra that this would be a problem in the future, if I wanted to upgrade to broadband.[122]

2.114 There sometimes seems to be some confusion, even from Telstra personnel, about the reason that ADSL is unavailable on a particular service. One customer recounted his experience in trying to obtain an ADSL connection:

> On 5 June I rang the 1800 151 311 number as per the advertisement in the Courier Mail to obtain my "faster affordable Internet experience", only to be told that, despite my close proximity to the centre of a large regional centre like Toowoomba, I was unable to obtain an ADSL connection because we have "a pair gain phone line system", and, "You can't expect to just ring up and get that sort of service like you would a telephone"
>
> I made contact with the electorate office of my local member of parliament and dealt with a very helpful aide who made contact with the local Telstra Countrywide office. One of the Countrywide staff then rang me back to correct some of the miss-information that I had been given during my previous telephone contact with Telstra. It appears that we have standard telephone lines, but are unable to access ADSL because we have a line length of 4800 metres, and the service will only reliably work up to a line length of 4000 metres from the telephone exchange.[123]

2.115 The Committee took up this issue with Telstra:

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120 Ms Teresa Corbin, Acting Executive Officer, Consumer Telecommunications Network, Committee Hansard, 28 November 2002, p 203.

121 Mr Denis Mullane, Manager, BigPond Network Capability, Telstra, Proof Committee Hansard, 7 August 2003, p 887.

122 Mr Chris Tangey, Submission 35.

123 Mr Geoff Thompson, Thompson Consulting Engineers Pty Ltd, Submission 1, p 2.

> The short answer to your question about the RIMs is that we are actually no longer deploying RIMs. We have stopped that. We do not buy them anymore. They are not manufactured anymore. We are now deploying CMUX technology, and the CMUX-AU is the version of the CMUX that is designed to take up from where the RIM was formerly utilised. It is a device that handles the same sort of capacity of PSTN and ISDN that RIMs were able to provide for, but it has also been designed to provide broadband capability to a percentage of the customers in that area. Those devices have been deployed from earlier this year - early in the first half of this year - but when we first got access to the technology from the vendor it only had PSTN capability. ISDN was proven in a pilot phase, and that is now available in the market. The broadband capability of the CMUX-AU is being piloted this month in one exchange area of Queensland. Subject to that being a straightforward exercise, which we are reasonably confident it should be, we will have the broadband capability available in the new subdivisions in which we deploy these devices[124]

2.116 After this statement became the cause of some press discussion based on apparently contradictory evidence given by the company's representatives at another Senate committee inquiry, Telstra advised the Committee that some RIMs were still being deployed in special circumstances.

2.117 Telstra also advised the Committee that it was trialling a miniMUX system which could be fitted to an existing RIM to provide a limited number of broadband connections. A miniMUX provides 24 ports for ADSL and up to two miniMUXs can be installed in a RIM. The installation of a miniMUX is, however, dependent upon there being both sufficient demand and space to install the equipment in the RIM cabinet. Telstra outlined the status of the trials for the Committee:

> This relates to a pilot period of assessment of miniMUX capabilities and the processes that relate to Telstra's provisioning and maintenance of wholesale and retail services through these miniMUX devices. We instituted a trial in four RIM areas in the Crace exchange area in Gungahlin and surrounding suburbs early this year. We later extended that trial to encompass another six exchanges, three of which were in the Townsville area and three of which were in the Castle Hill/Kellyville area in north-west suburban Sydney.
>
> Part of the reason for the trial—there were a couple of reasons, really—is that there were some technical aspects of the performance of miniMUX inside a closed cabinet out in the street environment in relation to heat loading and so on that had to be assessed. There are four different types of RIM cabinets. Each one is slightly different, so the mechanics and physical performance had to be checked. That has proceeded to our satisfaction in that technical sense.

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124 Mr Denis Mullane, Manager, BigPond Network Capability, Telstra, Proof Committee Hansard, 7 August 2003, p 916.

> The integration of our provisioning processes and our maintenance processes has been worked through and tested in the different areas, so there is no issue in respect of where a miniMUX might be. We have a performance guarantee period for new technology that we then implement so that our operational part of the company is well satisfied they can operate that equipment well. That period comes to an end this week, so we are expecting formally to complete the trial and begin the commercial deployment of miniMUXs where it is appropriate, from this point on.[125]

2.118 Telstra advised the Committee that other methods of addressing the problems posed by pair gain systems have been to use one CMUX to provide ADSL services in an area with RIMs or to use available copper in the same area.

Response to the Regional Telecommunications Inquiry

2.119 The Regional Telecommunications Inquiry (RTI) recommended that Telstra should give a formal undertaking to the Government including providing timeframes in relation to any action required to implement a strategy for improving the quality of telephone service affected by the use of 6/16 and similar pair gain systems.[126] In response to this recommendation the Government said that Telstra would provide it with a formal undertaking on 'its strategy, including timeframes, to improve, as soon as possible, phone services affected by the use of 6/16 and similar pair gain systems'.[127] An undertaking on this issue was signed by Telstra and the Commonwealth on 18 December 2003.

2.120 Subsequent examination of the undertaking between Telstra and the Government and questioning of Telstra during estimates hearings has exposed the limitations of the undertaking. The undertaking between Telstra and the Government deals only with problems of congestion on 6/16 and similar pair gain systems. It does not address the issue of the inability of these systems to provide access to ADSL, or to the same level of service in relation to calling number display and faxstream services[128] as other customers enjoy. When Telstra was asked whether it was only removing these systems when services degrade to a point that it is not a quality service a Telstra representative replied that:

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125 Mr Denis Mullane, Manager, BigPond Network Capability, Telstra, Proof Committee Hansard, 7 August 2003, p 914.

126 Regional Telecommunications Inquiry, Connecting Regional Australia, November 2002, p XV.

127 The Government's response to the recommendations of the Regional Telecommunications Inquiry, http://www.dcita.gov.au

128 Telstra Corporation Limited, Submission 107d.

> We remove them when there is a very clearly agreed set of criteria based around the congestion performance.[129]

2.121 The RTI also recommended that:

> Recommendation 4.2
>
> Telstra should be required to demonstrate that it has an effective strategy to address any dial-up data speed issues arising from poorly performing pair gain systems. Telstra should provide a formal undertaking to the Government in relation to any actions necessary to implement such as strategy.[130]

2.122 At the time that this report was being prepared the Government had not secured such an undertaking.

2.123 Telstra has indicated that it is phasing out the older systems and that the newer systems being used have greater capabilities. During the final hearing on this inquiry on 7 August 2003 Telstra advised the Committee that, for example, it is phasing out the 6x16 medium line concentrators and that last year 520 of those systems had been removed.[131] More recently Telstra has stated that it has removed 670 of these systems and that about 5,600 remain:[132]

> The use of the network reliability framework now clearly identifies where there are problems in the network, and then the remedial plans will go accordingly. If during that process we have identified that a pair gain system, whether it is large or small, is the cause of a problem from a customer perspective, that is where those plans will be built. That is the way we will prioritise it.[133]
>
> We do not have specific time frames against specific types of pair gain systems, except to say that all the older systems - and I would refute the term 'archaic'; they are just older - are all decreasing in their installed base,

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129 Environment, Communication, Information Technology and the Arts Legislation Committee, Additional Estimates, Proof Committee Hansard, 16 February 2004, p 104.

130 Regional Telecommunications Inquiry, Connecting Regional Australia, November 2002, p 235.

131 Mr Denis Mullane, Manager, BigPond Network Capability, Telstra, Official Committee Hansard, 7 August 2003, p 861 - 863.

132 Environment, Communication, Information Technology and the Arts Legislation Committee, Additional Estimates, Proof Committee Hansard, 16 February 2004, p 104.

133 Mr Anthony Rix, Head, Service Advantage, Telstra, Official Committee Hansard, 7 August 2003, p 922.

> every one of them. I will mention that the 1+1 FM system has basically gone in the last year.[134]

2.124 In the Committee's view the continued use of outdated pair gain systems which impede access to services is not acceptable. Customers should be entitled to know if the level of service on their line is affected by the presence of pair gain systems and these systems should be phased out as soon as possible.

Payphones

2.125 As the current Universal Service Provider, Telstra is required to ensure that payphones are reasonably accessible to all people in Australia on an equitable basis, wherever they reside or carry on business.[135] Payphones are also provided by other private operators, however. Concerns were raised with the Committee about the availability of payphones and some aspects of their operation.

> I live just 100ks from Melbourne, Half way between Ballarat and Daylesford, ….
>
> Recently Telstra opted to remove the nearest Public Phone which was 6ks from our home and we now have to travel to Creswick 17ks away to use a Public Phone to report any faults with our home phone. A fairly frequent occurrence in this area. So much for increasing services to Country people.[136]

2.126 And:

> Council is also concerned about telephone access at major tourist attractions. In this Shire, there are major water sport/recreation facilities that are widely used by locals and tourists alike. Unfortunately, should there be an accident, there is no public telephone (or mobile phone) access at the lake, so making emergency communication difficult.[137]

2.127 Concerns were also raised about payphones not giving change.[138]

2.128 Following the conclusion of the Committee's hearing program, the Australian Communications Authority reported to the Minister for Communications, Information Technology and the Arts on its review of the provision of payphones in Australia. In relation to the adequacy of payphone services the ACA found that:

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134 Mr Denis Mullane, Manager, Bigpond Network Capability, Telstra, Official Committee Hansard, 7 August 2003, p 923.

135 *Telecommunications (Consumer Protection and Service Standards) Act 1999*, section 19(1).

136 Ms Lorraine Boyd, Submission 7.

137 Aramac Shire Council, Submission 60.

138 Mr Peter Hanson, Submission 28.

> … existing payphone services in Australia are reasonably adequate and overall customer satisfaction is rising. In particular, the number of public payphones remains fairly stable.[139]

2.129 However, the ACA raised concerns about the reliability of Telstra's payphones and its fault repair performance:

> … the overall reliability of Telstra's payphones and its fault repair performance is poor in remote Australia, especially but not only in remote indigenous communities. There are steps that Telstra can and should undertake to improve the reliability of its payphones. The ACA will undertake closer monitoring of USO performance by Telstra in these target areas.[140]

2.130 The ACA made a total of thirty three recommendations aimed at improving payphone services, particularly for indigenous Australians and people with a disability, improving processes for determining the location of payphones, and improving Telstra's fault repair performance with regard to payphones. As the ACA's report was released after the conclusion of the Committee's public hearing program, the Committee has not had an opportunity to examine its findings or to seek comments on them from interested parties. The Committee has not, therefore, reached any conclusions nor made any recommendations following on from ACA's recommendations. Its findings in relation to people with a disability are discussed in the following section.

Services for people with disabilities

Legislative requirements

2.131 People with disabilities often require special equipment to allow them to access the telecommunications network. The *Telecommunications (Consumer Protection and Service Standards) Act 1999* requires that the supply of a standard telephone service by the universal service provider, currently Telstra, include the supply of other equipment to people with disabilities, such as access to mobile phones and telephone access at public venues, in order to comply with the provisions of the *Disability Discrimination Act 1992*.

2.132 Several witnesses suggested that the current regulatory regime does not adequately address the changes occurring in telecommunications in Australia, that existing telecommunications legislation should be reviewed to ensure that it reflects new developments in technology, and that the resulting services on offer to the general public remain accessible to people with disabilities:

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139 Australian Communications Authority, *Payphone Policy Review*, p 1.

140 ibid., p 2.

> As alternative telecommunications technologies are introduced, it is time to ensure that the quality and safety standards that Australians expect are not eroded. Telecommunications legislation needs to accurately reflect the broader obligations of telecommunications companies, especially in relation to the needs of people with a disability.[141]
>
> But I do believe that it is time to go back and review the legislation, to look at the definition of a standard telephone and at how we define the obligation to provide access for people with disabilities and to make sure that these kinds of black holes do not occur in the future. One of the ironies is that the previous legislation is basically technology specific. We need technology neutral legislation which enshrines the basic right of access to telecommunications for people with disabilities. 'That is our primary recommendation to you.[142]

2.133 A similar plea was made in other submissions with respect to consumers more generally and not just those with a disability.[143]

2.134 Australian Communication Exchange Ltd (ACE) provides the National Relay Service on behalf of the Commonwealth Government. The service exists under legislation to provide telecommunications access for people with disabilities, particularly people who are deaf or have hearing or speech impairments. It is a vital and important service, as it gives people who would otherwise be denied access to the network the ability to communicate with the general community. ACE submitted[144] that the introduction of wireless local loop (WLL) in regional and rural areas places Telstra in breach of its USO, because the technology is incompatible for Teletypewriter (TTY) users and thus effectively reduces their communication options in comparison to with those of the general public. The Australian Communications Authority disagrees, however, considering that Telstra's approach to rolling out CDMA WLL services 'will fulfil Telstra's obligations under the USO and the Determination.' The Authority did acknowledge, however, that emerging technologies could possibly require changes to regulatory requirements.[145]

Disability Equipment Program

2.135 Equipment for people with disabilities is usually provided at present through the Disability Equipment Program (DEP) operated by Telstra and provided as part of

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141 Australian Communication Exchange Ltd, Submission 65, p 8.

142 Mr Leonard Bytheway, Australian Communication Exchange Ltd, Committee Hansard, 28 November 2002, p 245.

143 See, for example, Consumers' Telecommunications Network, Submission 88, pp 7-8.

144 Australian Communication Exchange Ltd, Submission 65, pp 6-7.

145 See letter from Australian Communications Authority to Australian Communication Exchange, Submission 65, Appendix A.

its Universal Service Obligations (USO). This program was criticised by a number of witnesses representing people with disabilities.

2.136 First, they were concerned that the DEP is offered solely by Telstra (although Optus provides some equipment for customers using the Optus cable). Consequently, it was suggested that people with disabilities are being denied the full choice of telecommunications services and the full advantages of competition policy.[146]

2.137 Second, it was claimed that only limited equipment is available through the DEP, it is chosen solely by Telstra and much of it is dated:

> In some respects the protection of our entitlements has become 'fossilised' at the technology stage we had reached in 1997. Equipment for people with disabilities has not kept up with new technologies, and in some respects people needing adaptive devices are now further isolated than they were ten years ago, despite the enormous potential of new communications technologies to overcome the barriers of disability.[147]

2.138 Some submitters expressed concern that Telstra was able to vet access to the DEP:

> To get equipment from Telstra I have to get a doctor's signature, which seems quite reasonable, but then I have to be vetted by the operator at the disability inquiry hotline. What knowledge do those operators have of hearing loss or any other disability? [148]

2.139 To overcome these concerns, a number of disability representatives suggested that the DEP should be independent of Telstra, or indeed of any carrier:

> … an independently run disability equipment program would be really important. The consumers would be free to go to it, and they would not need to have a Telstra standard line into their home.[149]
>
> The comment from the whole of the disability sector is: why do Telstra, or any other carrier, choose which equipment is available and which is not? That is why we believe the independent solution is the best, both for vetting

146 Deafness Forum of Australia, Submission 40, p 3.

147 Consumers' Telecommunications Network, Submission 88, p 9.

148 Mr Andrew Stewart, Deafness Forum of Australia, Committee Hansard, 28 November 2002, p 183.

149 Mr Harold Hartfield, Physical Disability Council of Australia Ltd, Committee Hansard, 30 April 2003, p 515.

> and for the supply of equipment, so it can be decided on fairly what should be on the equipment list and it should be allocated fairly and reasonably.[150]

2.140 Attached to the submission from the Deafness Forum of Australia was a paper by TEDICORE (Telecommunications and Disability Consumer Representation) outlining the following key principles for such a program:

- the program be consumer-focussed and managed;
- equitable access to the Internet and mobile telephony be considered an integral part of access to telecommunications;
- user needs with regard to new telecommunications technologies be taken into account;
- telecommunications products and services to be based on the principles of inclusive design where possible, with specialised products to be compatible with, and easily connected to, mainstream products; and
- the program be based on principles of social justice from the Universal Declaration on Human Rights - 1948 and the United Nations Declaration on the Rights of Disabled persons.[151]

2.141 TEDICORE favoured the introduction of a public procurement policy for disability equipment to facilitate the access of people with disabilities to appropriate telecommunications equipment:

> … we really would like to see a big change in the way disability equipment is provided under an independently run program.
>
> …We consider that that [public procurement] is a very important issue that we would like to continue stressing as a way of encouraging more accessible equipment being available in Australia – through the government taking a proactive role by ensuring that it specified in its public procurement policy that it would prefer tenders which included accessible equipment, as is happening in the United States at the moment.[152]

2.142 Telstra disputed claims that the company offered only a limited choice of equipment to people with disabilities:

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150 Mr Andrew Stewart, Deafness Forum of Australia, Committee Hansard, 28 November 2002, p 186.

151 TEDICORE. Key principles of proposed Disability Telecommunication Program, Deafness Forum of Australia, Submission 40, Appendix 2, p 37.

152 Ms Gunela Astbrink, Telecommunications and Disability Consumer Representation, Committee Hansard, 30 April 2003, p 508.

> Our view is that we do offer a comprehensive range of equipment that you [the disabled] can get through the program and we do … undertake our customer satisfaction surveys to ensure that the equipment we provide to customers is meeting their needs and expectations.[153]

2.143 Its representatives advised the Committee that Telstra had recently revised its catalogue of products and services for people with a disability and they provided the Committee with a copy.[154] They also outlined some of the steps Telstra is taking to improve the range of equipment available for people with a disability:

> More recently we have announced Braille and large visual display TTYs—that is in a flier that we circulated amongst the deaf and/or blind community; we launched that not very long ago—so the equipment program has been expanded. As well as that we are developing a multifeatured disability phone. In the hearings you would have heard that perhaps a big button phone would be useful for some customers. We recognise that and that is what we are working on. We hope to have it available late this year. We are certainly working hard to achieve that time line.[155]

2.144 Telstra representatives also informed the Committee that it had established a wholesale program which would allow other service providers to offer disability equipment to their customers:

> Telstra Wholesale established a disability equipment program in January 2003, so this is a fairly new initiative. It allows service providers to supply specialised telephone disability equipment to eligible customers in order for them to access the standard telephone service. Under this wholesale program, the full range of disability equipment that is available through Telstra's program is also available to those service providers who might want to offer that service to their own end users—that is, their own customers. Telstra has established a disability wholesale help desk for the service providers.
>
> …Since that program was established—and I again say it was just at the beginning of this year—it has received about 650 calls and has processed 37 applications on behalf of service providers.[156]

153 Ms Margaret Portelli, Group Manager, Consumer Affairs, Telstra, Proof Committee Hansard, 6 August 2003, p 825.

154 ibid.

155 ibid.

156 ibid., pp 819- 820.

Existing telecommunications equipment and services

Access to phones, payphones and TTYs

2.145 Many people who are deaf or hearing impaired rely on a teletypewriter (TTY)[157] to communicate. Their opportunities for full communication are limited by the number of TTYs located in public places:[158]

> …if it is necessary for a particular individual to be issued with a TTY for use in the home then clearly it is necessary for that person to have access to TTYs wherever they go. This means that TTYs should be provided as necessary as part of the Australian communications network.[159]

2.146 This is a particular concern in the case of emergency calls:

> One particular area of concern relates to emergency call services. While the emergency call service number 106 has been established as an alternative to 000 for TTY users, that does not solve the problem if the telephone service does not support TTYs … problems arise for TTY users when they are away from home where they have a TTY.[160]

2.147 The Australian Communications Exchange referred to the TTY technology used by people with disabilities in Australia as 'end of life' technology, isolating people from developments elsewhere:

> Teletype devices were literally recovered from disuse in the late 1960s and refurbished and modified to become the first TTYs used by deaf people. Deaf people chose an 'end of life' technology as their platform because it was available, cheap and it worked. TTYs in current use in Australia have a very similar form factor to those introduced in Australia in 1980.
>
> …Thus Australia is a 'TTY island' using a system not deployed extensively anywhere else in the world.[161]

2.148 Other hearing impaired people rely on volume control on their phones. Few public payphones have volume control. These are therefore inaccessible to hearing impaired people:

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157 Using this system a deaf person may converse over the phone line through the medium of a keyboard, screen and printer.

158 There are 171 across Australia according to Mr Andrew Stewart, Deafness Forum of Australia, Committee Hansard, 28 November 2002, p 188.

159 Deafness Forum of Australia, Submission 40, p 4.

160 ibid., p 5.

161 Australian Communication Exchange, Submission 65, p 9.

> One of the major problems for Australians with a hearing/deafness disability is the lack of access to volume control voice phones when away from their homes. If it is necessary for a particular individual to be issued with a volume control voice phone with a hearing aid coupler for use in the home, then clearly it is necessary for that person to have access to volume control voice phones with hearing aid couplers wherever they go.[162]

2.149 It was suggested that increasing the availability of volume control would transform the lives of many hearing impaired people:

> The simple addition of volume controls would make all the difference to the ability of hearing impaired people to move freely around the world. We talk a lot about TTYs, which are vital and high-tech, but simple volume controls would change the quality of life of millions in Australia. [163]

2.150 Even where available, the volume control on public phones in Australia is inadequate for people with significant hearing loss, and inferior to the volume control available in some other countries:

> Unfortunately, saying that payphones should have volume control is not sufficient. The loudest volume available on existing payphones in Australia is insufficient for anyone with close to severe hearing loss and is well below the "best" overseas payphones.[164]

2.151 Access to payphones by people with physical disabilities can also be limited by their location and their height, which may place them beyond the reach of people in wheelchairs:

> The height and access to payphones continue to cause significant concern to people with physical disabilities. Many payphones are still not accessible in terms of height, and in terms of being able to gain access to the phone itself, particularly for those with limited upper limb dexterity.[165]

2.152 Concern was also expressed that deaf and hearing impaired people relying on TTYs were adversely affected by the phasing out of the analogue mobile phone service network and its replacement by GSM and CDMA phones. Currently they cannot use their TTYs to communicate by mobile phone, a significant limitation given that there are now more mobile phone connections than fixed line connections in Australia:

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162 Deafness Forum of Australia, Submission 40, p 4.

163 Ms Margaret Robertson, Deafness forum of Australia, Committee Hansard, 28 November 2002, p 189.

164 Deafness Forum of Australia, Submission 40, p 4.

165 Mr Harold Hartfield, Physical Disability Council of Australia Ltd, Committee Hansard, 30 April 2003, p 508.

> Both GSM and CDMA phones effectively garbled the signal of the TTY when it was sent across the telephone network, and they have lost that access… We are saying that a large number of people in Australia who rely on text telephony are not able to get access to over half the network.[166]

2.153 While deaf and hearing impaired consumers can, and do, make use of mobile phones for text messaging, cost is claimed to be an issue for many.[167] Because of these developments it was suggested by some witnesses[168] that the quality of access to equipment and services by people with disabilities has been substantially degraded over the last five years. Others stressed the importance of ensuring that future developments do not similarly disadvantage people with disabilities:

> Let us look at what is going on in technology and make sure that deaf and hearing impaired people's interests are considered first, not afterwards, when they have to make complaints through the DDA to get their needs met.[169]

Closure of aged and disability centres

2.154 A number of witnesses commented on the adverse impact of Telstra's closure in 2003 of its six aged and disability centres. These were said to have played an important role in informing consumers with disabilities of the range of equipment available and in advising them, generally on a one-to-one basis and often in their homes, of the equipment best suited to their needs. It was claimed that the centres were closed without consultation with the disability sector. They have been replaced by a disability hotline, an inadequate substitute in the view of some witnesses:

> The alternative arrangements put in place by Telstra are not satisfactory. The use of the Telstra disability hotline – a telephone service – as the primary source of assistance for people with disabilities is not really a satisfactory substitute for the human contact of a telecommunications expert matching the needs of a person with a physical disability. As a principal provider of disability equipment, this particular move by Telstra to close the centres is deeply regretted by the disability community.[170]

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166 Mr Leonard Bytheway, Australian Communication Exchange, Committee Hansard, 28 November 2002, p 242.

167 See, for example, Australian Association of the Deaf, Submission 68, pp 3-4; Consumers' Telecommunications Network, Submission 88, p 12.

168 Mr Leonard Bytheway, Australian Communication Exchange, Committee Hansard, 28 November 2002, p 244

169 Ms Margaret Robertson, Deafness Forum of Australia, Committee Hansard, 28 November 2002, p 182.

170 Mr Harold Hartfield, Physical Disability Council of Australia Ltd, Committee Hansard, 30 April 2003, p 510.

Telstra response

2.155 Telstra representatives advised that the closure of its aged and disability centres was prompted by their lack of support in the disability sector:

> The reason we closed these centres is that we found that they in fact were not being used very frequently. On average we had about three visits per week to these centres. It seemed to us that we were not in fact meeting the needs of people with a disability. … We have now changed our approach so that, for all intents and purposes, we are turning almost every Telstra shop into a shop whereby people with a disability will be able to get the sort of advice they need about what might be available for them. [171]

2.156 However, they did acknowledge that there was inadequate consultation with the sector about these closures:

> We did brief them prior to the closure but I think their criticism in terms of perhaps the haste in which it was done is something that we recognise. Certainly, we did receive some criticism about the lack of consultation that occurred over the closures.[172]

2.157 Telstra drew the Committee's attention to the steps being taken to address these issues,[173] primarily through its third Disability Action Plan.[174] Telstra has an ongoing program to review the location of TTY payphones and to investigate the feasibility of a robust TTY payphone attachment for outdoor locations.[175]

2.158 In October 2000 a major research program on physical payphone access commenced under the guidance of an independent steering committee. Telstra stated that it now has an ongoing program to ensure that payphones are mounted in accordance with the findings of that research. Telstra is trying to promote awareness of access requirements among suppliers and commercial site owners for both wheelchair users and the visually impaired.[176] The Disability Action Plan also states

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171 Mr Bill Scales, Group Managing Director, Regulatory, Corporate and Human Relations, Telstra, Proof Committee Hansard, 6 August 2003, p 825.

172 Ms Margaret Portelli, Group Manager, Consumer Affairs, Telstra, Proof Committee Hansard, 6 August 2003, p 826.

173 ibid., p 827.

174 Telstra, *Telstra's Third Disability Action Plan 2002-2004*.

175 ibid., pp 16 - 17.

176 Ms Margaret Portelli, Group Manager, Consumer Affairs, Telstra, Proof Committee Hansard, 6 August 2003, p 827. *Telstra's Third Disability Action Plan. 2002-2004*, Telstra, p 16 - 17.

that payphones are being upgraded with an in-built hearing aid coupling device, volume control feature, language selection and large visual displays.[177]

2.159 Telstra representatives explained that, to overcome the problems faced by TTY users in accessing the mobile phone network since the phasing out of the analogue network, they will be offering alternative TTY accessible technology. This may take the form of the old copper wire service or radio with TTY capability.[178]

Developments in telecommunications equipment and service

2.160 Concerns were raised by a number of witnesses about the potential for new technology and convergence to overlook the needs of people with disabilities, as happened in the move away from the analogue network (as was discussed above). As mentioned above in the context of Telstra's universal service obligations, particular anxiety was expressed in relation to Telstra's current consideration of the deployment of a wireless local loop (WLL) in regional and remote areas, as this technology is not accessible to TTY users:

> The TTYs currently available in Australia will not work with a wireless local loop so access to the standard telephone service for Deaf people and people with a hearing or speech impairment will currently not be possible in an area serviced by a wireless local loop.[179]
>
> Telstra has made it clear, and for what I believe are quite reasonable business purposes, that is will be rolling out CDMA wireless local loop in a range of scenarios as the standard telephone service. … The quickest, easiest and cheapest way of getting networks rolled out there is to use wireless local loop. Wireless local loop is based on CDMA. It is not accessible for people with disabilities. So all of a sudden we are having whole chunks of our network cut out. We are basically punching black holes in that network for people with disabilities, which is not insignificant.[180]

2.161 Telstra has said that where wireless local loop is installed, the company will meet its obligations to people with disabilities by offering an alternate technology to residences and workplaces where there is a deaf or hearing impaired resident or worker. In the view of the disability sector this is an inadequate response since it will not take account of the future needs of people with disabilities who move their residence or workplace. Nor will it allow these people to access telephones outside

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177 Telstra, *Telstra's Third Disability Action Plan 2002-2004*, Telstra, p 16.

178 The options are discussed by Mr Don Pinel, Regional Managing Director, Queensland, Telstra Country Wide, Telstra, Proof Committee Hansard, 6 August, p 821.

179 Australian Communication Exchange Ltd, Submission 65, p 6.

180 Mr Leonard Bytheway, Australian Communication Exchange Ltd, Committee Hansard, 28 November 2002, p 242.

their homes or workplaces, a service available to every other member of the general public. It was argued that, therefore, such an approach represents an abrogation of the major carriers' responsibilities under the USO, as well as the requirements of the DDA.[181]

2.162 A further concern for people with disabilities is the roll-out of telephony using Internet Protocol, which is being progressively introduced into universities and some major public organisations such as CSIRO. This is also incompatible with TTYs:

> It [Internet telephony or IP telephony] looks and feels like a regular telephone. It has a number. You pick it up, you dial and it works. But it does not work with TTY. In fact, it will not work with any modulated modem type device. So again, we are now looking at areas the size of cities, whole universities – in fact, not just some but nearly all universities – losing their ability to be accessed by people with disabilities. So we now have a serious hole emerging in the telecommunications network for people with disabilities.[182]

2.163 The Australian Communication Exchange advocated the extension of the 'any to any' connectivity now operating in relation to voice telephone services to text and video connectivity. These options will become more viable with developing broadband technologies. 'Any to any' video connectivity will be especially valuable for deaf people who use Sign language as their first language:

> Deaf people who use Auslan would also prefer to use it when communicating on the phone. With the growing introduction of videotelephony (video conferencing, videophones and Video over Internet Protocol) and roll-out of broadband, there is now every opportunity for Deaf people to at last use their preferred language to communicate over the Australian network.[183]

2.164 Some witnesses suggested that the benefits of the technology may be limited for some people with disabilities by the cost of the equipment required:

> Consumers with a disability have a heavy reliance on telecommunications equipment and the increased impost [of Telstra's recent price rises] makes it increasingly difficult to remain connected. The problem is even worse for consumers in rural and remote areas.[184]

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181 See Australian Communication Exchange Ltd, Submission 65, pp 6-9 for a discussion of this issue.

182 Mr Leonard Bytheway, Australian Communication Exchange Ltd, Committee Hansard, 28 November 2002, p 244.

183 Australian Association of the Deaf, Submission 68, p 7.

184 Mr Harold Hartfield, Physical Disability Council of Australia Ltd, Committee Hansard, 30 April 2003, p 110.

2.165 Telstra representatives advised the Committee that the organisation is conscious of the potential for new technology to adversely impact upon people with disabilities if their needs are not adequately considered during the development phase. To prevent such an eventuality Telstra has ongoing discussions with the disability sector:

> …what we are always battling with in this area is that it is moving as rapidly as it is. That includes how to make sure that we are providing people with a disability with the ability to link into that new technology at the same time as it is being rolled out. We are very conscious of the fact that the disability community in general see this as being a very important point of principle.[185]

2.166 Telstra witnesses acknowledged, however, that its efforts are not always successful:

> But to be absolutely honest with the committee, it is not always possible to do that, so we sometimes get into this dilemma of not knowing how long one can delay the roll-out of a technology that is required by the community at large, because one does not have available to an important part of the community a corresponding technology which will meet their needs. .. We try to work in advance of these new technologies, so it coincides with their introduction, but it is not always possible.[186]

2.167 They also pointed to the need, in developing new technologies, for Telstra to respond to demand rather than anticipating it:

> Another assumption seems to be … that Telstra can and should provide the infrastructure necessary to deliver the latest technology before genuine demand has been established for the services provided by this technology. I think we have to say that all organisations – whether they are public, private or even not-for-profit - must ensure that their investments are somehow, to the best that they can manage them, synchronised with demand for their goods and services.[187]

2.168 Telstra is aware of concerns by disability advocates that developments in 'any to any' connectivity might not adequately address their needs. It has established a Working Group to look at options and consumers and disability advocates are represented on that Group.[188] Telstra says that it is investing heavily in the broadband infrastructure necessary to support 'any to any' connectivity in text and video, having

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185 Mr Bill Scales, Group Managing Director, Regulatory, Corporate and Human Relations, Telstra, Proof Committee Hansard, 6 August 2003, p 822.

186 ibid.

187 ibid., p 830.

188 For further details see Proof Committee Hansard, 6 August 2003, pp 2-3.

spent $1 billion to date, with an additional $1 billion to be allocated over the next five years.

Payphone policy review

2.169 On 31 March 2004 the Government released the ACA's report on its review of the provision of payphones in Australia.[189] The ACA recommended that:

> 3. The payphone industry and disability peak bodies should consult through an Australian communication Industry Forum (ACIF) working group, and work together to develop a Payphone Accessibility Code for endorsement by HREOC. Australian Local Government Association (ALGA) and the Property Council should be invited to be involved in this ACIF group. The group should look for approaches that:
>
> - maximise reasonable accessibility for people with a disability;
> - are flexible enough so as not to inhibit the overall provision of public and private payphones; and
> - provide certainty to payphone operators that they have met their obligations under the Disability Discrimination Act.
>
> 4. Telstra should continue to increase teletypewriter (TTY) payphone numbers in secure locations where there is evidence of need and TriTel and other specialist payphone firms should, at a minimum, provide TTY payphones in private sites when an agreement with the site owner requires Telstra to remove a TTY payphone. TTY siting criteria could be discussed in the proposed ACIF working group. The ACIF working group should also propose a means of providing comprehensive information about the location of TTY payphones. TTY payphones also need clear instructions displayed to explain how to use them.[190]

2.170 The Committee has not had the opportunity to examine the detail of these proposals. However, they are consistent with the evidence which was received by the Committee during its hearings and it supports the general thrust of the ACA's recommendations.

Summary

2.171 The Committee firmly believes that adequate communications are as important, if not more important, for the disabled as they are for the able-bodied. While there are telecommunications issues affecting the able-bodied who live in rural and remote

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189 Australian Communications Authority, *Payphone Policy Review*, 20 February 2004.

190 ibid., p 5.

areas which could be expected to be even more challenging for the disabled, the Committee was disturbed to learn that new technology represents an issue for the disabled even in major urban areas. The Committee also recognises the challenges for telecommunications providers to give appropriate priority to the needs of the disabled in such a rapidly changing environment, while noting that new technology has an inherent capacity to provide solutions.

2.172 In the Committee's view there is a strong case for the development of an independent disability equipment program. This would allow telecommunications users who are affected by a disability to access a service from a wider range of service providers and give them greater control over what equipment should be available.

2.173 The Committee accepts Telstra's argument that the closure of its aged and disability centres was justified by their limited use, but expresses its disappointment at the poor manner in which the closure was handled. Apart from these issues, the Committee is satisfied that the needs of the disabled are generally receiving appropriate attention. There is no doubt, however, that such attention would be diminished in a fully competitive market without a continuing system of government regulation, with telecommunications providers aiming at ever lowered costs, rather than the provision of services which might not be justified on a fully commercial basis.

Priority services

2.174 The background and operation of Telstra's priority assistance service is outlined in Appendix 5. However, that program only extends to Telstra's network. During the Committee's hearings this issue was discussed by Telstra:

> …. you may be aware of what is described as the Priority Assistance Program, which is a program set up to enable us to meet the needs of customers who might have a life-threatening illness. Whilst that program is particular to Telstra at the moment, the government has asked other providers to consider making the same service available to their customers. There is quite a bit of discussion going on within the industry about how that might be done in a way which does not necessitate the government putting into place a licence condition on them to ensure that it happens.191

Mobile networks

2.175 The availability of mobile phone coverage was raised as an issue in many of the submissions received by the Committee. Most of the evidence which expressed concern about the extent of mobile coverage was received from, or related to, rural,

191 Mr Bill Scales, Group Managing Director, Regulatory Corporate and Human Relations, Telstra, Committee Hansard, 6 August 2003, 820.

regional and remote areas. Much of this evidence came from local government bodies or organisations.[192] Some examples will suffice to give the picture:

> Approximately 30% of our Council area is without Digital Mobile Phone Services. This includes the Townships of Swan Reach, Walker Flat, Purnong, Bowhill, Murbko, Mt. Mary, Keyneton, Tungkillo, parts of Palmer and the eastern Mount Lofty Ranges within our area (except adjacent to the Sturt Highway).[193]

> That their mobile phones work EVERYWHERE and not only in certain areas so that when driving twenty kilometres the services appears and disappears.[194]

> Our mobile phones continue to drop out in this area especially when travelling to and from Coffs Harbour. There are quite a few black spots around the area and we have purchased a CDMA phone to try and overcome the problem but still find that the phone drops out at certain spots.[195]

> I live just 100ks from Melbourne, half way between Ballarat and Daylesford, we have never had a mobile phone service here and our mobile phones are only used when we are away from home. Service between our home at Ballarat are intermittent even when we are travelling toward Ballarat and Telstra readily admit to this.[196]

2.176 Concerns about the possible consequence of inadequate mobile coverage related not only to business and social needs, but also to the ability to seek help in the case of emergencies:

> A recent tragic incident near the Scott River district south of Nannup illustrated this dramatically when a father and husband was unable to call for help when his wife and sons were swept from rocks into the sea.[197]

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192 See also: Parry Shire Council, Submission 23; Jill White, Submission 25; Joanne Johnston, Submission 27; Peter Kane, Submission 29; Roslyn Joseph, Submission 32; Crookwell Shire Council, Submission 34; District Council of Grant, Submission 38; Government of Western Australia, Submission 44; Burdekin Shire Council, Submission 47; Carbonne Council, Submission 51; The Hon Dick Adams MP, Submission 52; South East Local Government Association Inc, Submission 54; Aramac Shire Council, Submission 54.

193 Mid Murray Council, Submission 30.

194 Country Women's Association of NSW, Submission 37

195 Sub Committee of Nambucca shire's Economic and Development Committee, Attachment to Submission 66, p 2

196 Ms Lorraine Boyd, Submission 7.

197 Warren-Blackwood Economic Alliance, Submission 144, p 7.

2.177 The Committee accepts advice that mobile phone coverage is continuing to expand. Many submitters acknowledged that mobile coverage in rural areas had improved, although it is still inadequate in places.[198] Telstra advised the Committee that it was continuing to expand its mobile coverage:

> During the life of this committee we have also significantly expanded the size of our CDMA mobile phone network. Last financial year we added 402 base stations and repeaters. This has increased mobile phone network coverage from 15 per cent of the landmass to almost 19 per cone tot the landmass, with over 98 per cent of the Australian population now covered by Telstra's CDMA mobile network. This financial year we plan to add a further 482 base stations and repeaters. This will increase mobile coverage to well over 20 per cent of the land mass by June 2004.[199]

2.178 Telstra also provided the Committee with information about the cost of providing mobile coverage and the economic viability of expanding coverage to smaller communities:

> …. It is not purely the cost of the base station but the back haul transmission capacity back to a base station controller, which is generally located in the capital cities. So, in the Queensland context, it is in Brisbane. That is a variable cost of course, depending on the distance and the availability of transmission capacity out there. In a general sense, though, if I can generalise, an economically viable solution runs out at a community of about 1,000 people.[200]

2.179 Telstra went on to outline the effect that Government programs have had in enabling coverage to be expanded to smaller communities:

> Since then, of course, we have had the government programs of NTN and Besley that have helped to fund communities that are significantly smaller than that. At the bottom end, we are talking about communities down to about 380 people. Subsequent to that, again there has been some special funding from other organisations such as state governments that has helped us to provide funding for things like gaps in highway coverage et cetera. The last Queensland government's mobile contract included a condition for the provision of mobile phone coverage on some of our highways, and there are other examples of the same thing. The short answer is that, on a straight economic basis, you can look at a community of around 1,000—this is for CDMA, by the way—but through various other programs there should be

198 Guyra Shire Council, Submission 15, Hay Shire Council, Submission 17, South West Development Commission, Submission 145; South East Local Government Association Inc, Submission 54, eNambucca Project Committee, Submission 66.

199 Mr Bill Scales, Group Managing Director, Regulatory Corporate and Human Relations, Telstra, Committee Hansard, 6 August 2003, p 830.

200 Mr Don Pinel, Regional Managing Director, Telstra Country Wide, Queensland, Committee Hansard, 7 August 2003, p 905.

> very few, if any, communities down below 380-odd people where we cannot provide a mobile phone service.[201]

2.180 However, the programs aimed at improving coverage have not been able to assist some communities because of their structure. In its submission the Shire of Nannup, in south western Western Australia, expressed concern about the poor mobile phone service in its area. As part of the Wireless West initiative that involves State, Federal and carrier involvement, two sites in its area were identified for mobile phone towers. Under the program the Council was requested to provide $20,000 per site towards the cost of the infrastructure. As the Council was unable to contribute to the cost, the sites will not be built. The Council expressed concern that local governments were being held to ransom in the site selection process and that the funding of telecommunications infrastructure is not a local government responsibility.[202] Telstra acknowledged that under the Networking the Nation program contributions from local communities were required:

> Under the Networking the Nation program, there was a requirement for whoever was making the application to NTN—and it was not always a council; it could have been another community group—to contribute $10,000. That is in the context of a base station that might cost in total half a million bucks or thereabouts. So, yes, there was a requirement under that program for that contribution to be made.[203]

2.181 Some submissions also noted that while the total extent of mobile coverage was increasing, the important issue for users was the coverage of the network to which they could gain access. In its submission the South West Development Commission stated that there was an expectation, especially by international visitors, that GSM mobiles will work throughout the region.[204] This issue was also raised in relation to programs designed to improve coverage on regional highways:

> I find it quite untenable that tenders were requested from Vodafone, Telstra and Optus for Federal Govts $50.5 million program to improve mobile phone coverage on 35 regional highways.
>
> With Telstra virtually the only provider of CDMA service (Optus offers CDMA on Telstra equipment), it would mean that Vodafone and Optus would be tendering for GSM service. As the carriers do not "speak" to each other (inter-carrier roaming) - a subscriber to Optus GSM cannot access service from a Vodafone or Telstra GSM tower and vice versa - it would

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201 Mr Don Pinel, Regional Managing Director, Telstra Country Wide, Queensland, Committee Hansard, 7 August 2003, p.905.

202 Shire of Nannup, Submission 16.

203 Mr Don Pinel, Regional Managing Director, Telstra Country Wide, Queensland, Committee Hansard, 7 August 2003, p.906.

204 South West Development Commission, Submission 145, p 3.

> mean that anyone wanting continual coverage would need to carry CDMA, and three GSM phones to access all carriers.
>
> Inter–carrier roaming is technologically feasible within CDMA and within GSM networks but is not possible between CDMA and GSM networks as the different technologies cannot interact.[205]

2.182 The South West Development Commission suggested that one solution to this problem would be the development of a dual use handset.[206]

2.183 While most of the evidence received by the Committee on mobile phone coverage related to the extent of coverage in rural areas some submissions also raised the issue of blind spots in mobile coverage in both city and country areas:[207]

> Arriving in Brisbane, I expected almost a perfect mobile phone system …. Alas, I can't use either of 2 mobile phones in my Unit, or outside in the yard.[208]

2.184 In response to the concerns about continuing non-coverage of more remote areas by its GSM and CDMA networks, representatives of Telstra noted the availability of its satellite service:

> We still have TMS, our mobile satellite service, that covers the whole of the footprint of the country. So you can take that as an overlay network that fills in those gaps. It is not as if there is no service there; it is just a different platform that we use.[209]

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205 Carol Richard, Submission 46, p 3.

206 South West Development Commission, Submission 145, p 3.

207 Macedon Ranges Shire Council, Submission 33.

208 Mr Richard Millburn, Submission 2.

209 Mr Don Pinel, Regional Managing Director, Telstra Country Wide, Queensland, Committee Hansard, 7 August 2003, p 908.

Chapter 3

Faults and maintenance

3.1 In the previous chapter the Committee examined the capacity of the network to deliver services and some of the impediments to the delivery of services which result from the design of the network and the equipment used in the network. In this chapter the Committee examines network faults and maintenance issues which impact on the ability of the network to provide reliable services. Customers whose services are affected by faults are covered by the Customer Service Guarantee which is discussed in Chapter 5.

Network faults

3.2 The Committee received considerable evidence about outages due to decay in the network and poor service in repairing faults.[1] One of the issues identified related to the time taken to repair faults in rural areas. Customers in these areas felt that it took too long to have faults repaired and that the time taken to repair faults in rural areas compared unfavourably with the time required in urban areas. For example:

> Telstra service calls take an average of 2 weeks. Is this the same delay as experienced in urban areas?[2]

3.3 The reason for these delays was often felt to be related to the reduction in the level of staffing in rural areas and the consequent need for service staff to travel hundreds of kilometres to repair faults. This was described as being both inefficient and time consuming:

> …. With the partial sale of Telstra, there was a concomitant reduction in the level of staffing, and therefore service to that infrastructure. By this I refer to the reduction in local service staff to attend to problems. There have been many instances where servicemen have been sent from hundreds of kilometres away to service customers, resulting in delays due to distance travelled, and lack of knowledge of localities. This is not only inefficient, but unsatisfactory to customers.[3]

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1 Shire of Nannup, Submission 16; Ms Jennie George MP, Submission 26; the Hon Dick Adams MP, Submission 52.

2 Break O'Day Council, Submission 11.

3 Ms Roslyn Joseph, Submission 32.

> Residents of Hay are also faced with delays in having new phones connected or other service changes with contractors having to come to Hay from other regional centres.[4]

3.4 The standard of repairs was also criticised by many witnesses. Ms Jill White, for example, related that after the 1998 flood in the Katherine area:

> During the flood the phone system of course failed. Soon after the flood when the service was restored the Telstra joint was removed from the pit at the front of our house and hung on the fence. It is still there.[5]

3.5 Perhaps unsurprisingly, Ms White went on to relate that 'the service has an intermittent fault which is worse during wet weather.'[6] Other submissions also referred to repaired wires being left hanging on fences.[7]

3.6 Submissions from the various branches of the CEPU referred to cables with large numbers of faulty pairs and temporary repairs, and to the reduction in staff numbers by Telstra.[8] One particular concern related to the failure to follow up temporary repairs with permanent repair work:

> As the union is advised, there are countless instances where "first in" cable repairs have not been followed up by properly engineered permanent remedial action. We are regaled by accounts of cable joints in plastic bags often for months if not years. We are told of temporary cabling, above the ground which has been in place for extended periods of time without any likelihood of replacement or planned upgrade.[9]

3.7 In relation to the use of plastic bags, Telstra advised the Committee that:

> From time to time technicians revert to unorthodox practices to protect and restore services as a temporary measure. However, Telstra firmly believes that this practice is not widespread as it is not standard company practice and staff have been instructed not to use these items.
>
> Telstra does not encourage the use of non-standard materials. However Telstra's field staff are focussed on doing the job as quickly – and as completely – as possible. It is therefore possible that if a field service

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4 Hay Shire Council, Submission 17.

5 Ms Jill White, Submission 25.

6 ibid.

7 Michelle O'Byrne MP, Submission 140; Carol Richard, Submission 46.

8 Communications, Electrical and Plumbing Union, Tasmanian Communications Branches, Submission 133.

9 ibid, p 6.

> person does not have appropriate equipment available to them they may use other materials at hand as a temporary measure.
>
> Telstra field staff regularly update their equipment via depot visits. If the use of a plastic bag or similar temporary material is identified a permanent fix is completed as soon as practical.[10]

3.8 Telstra also denied assertions that it has been concentrating on temporary repairs to keep services operating in the short term rather than fully fixing faults:

> I would certainly refute that claim. A clear policy of ours is: fix it first time, fix it in a quality way and fix it once so that it stays fixed. Prior to the network reliability framework we had a lot of our own internal measures which our field staff, team leaders and managers were accountable for in relation to rereported faults.[11]

3.9 The Boulding case discussed in Chapter 2 and Appendix 5 also highlighted deficiencies in Telstra's fault management processes. In its report the ACA found that:

- information sharing between Telstra's customer management and fault management systems is deficient;
- important fault diagnosis information that was available was either not appreciated or not effectively used by technical staff at the time of the first fault repair;
- the failure to identify and record the root cause of the first fault extended the period of restoration of the Boulding family's telephone services;
- the absence of system information about key CAN components extended fault repair activity related to the second fault;
- the multiple faults on the services over 26 January to 7 February 2002, although recorded in Telstra's systems, did not accelerate repairs to these services; and
- technical information for this CAN suggests that there is a need for Telstra to ensure that its CAN enhancement program target areas where network performance is low.[12]

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10 Telstra, Submission 107b.

11 Mr Anthony Rix, Head, Service Advantage, Telstra, Official Committee Hansard, 7 August 2003, p 959.

12 Australian Communications Authority, Investigation into the provision and maintenance of telephone services to the Boulding family in Kergunyah, north-eastern Victoria, March 2002, p 6.

3.10 In response to an internally commissioned report into the Boulding case, Telstra announced a number of responses which would affect its overall fault management system. These included improving the availability of information to relevant staff, bringing forward improvements to the rural network, and establishing a system for ensuring that longstanding and complete fault repair work is reviewed daily by designated senior managers.[13]

3.11 The deterioration in the Telstra network has been blamed for major disruptions to services. In its submission the Tasmanian Communications Branch of the CEPU stated that on one occasion a rainfall of only 3.2 millimetres in Hobart led to water damage which resulted in 300 to 400 customers losing their telephone services.[14]

3.12 Some witnesses to the Committee's inquiry acknowledged that improvements have been made in service levels, particularly since Telstra Country Wide was established.[15]

> Recent initiatives in the provision of services in the telecommunications network by both Telstra and the federal government are to be commended. There has been a noticeable improvement in the level of response to requests for services since the establishment of Telstra Countrywide.[16]

Telstra staff cuts

3.13 In evidence to the Committee the CEPU raised concerns about a number of specific issues which it considered were contributing to the deterioration of the Telsta CAN. One reason given by the CEPU for the deterioration of the network was the relentless reduction in the number of technical and line staff over recent years:

> The levels of field staff in Brisbane Metro have been reduced by 400 over the last five years from almost 1200 Technical and Lines staff to just over 700 currently, a drop of 40%. The Country staff has been downsized by similar numbers.
>
> Telstra is currently going through a redundancy program and reducing by up to 10% in the rural, regional and remote areas of Qld and are planning to reduce by some 150 staff in the Brisbane area, two or three years worth in one chop!!.
>
> Field staff currently and for some time, have been working record amounts of overtime on weekends and after normal hours and contractors are being

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13 Telstra, Media Release, 14 March 2002.

14 Communications, Electrical and Plumbing Union, Tasmanian Communications Branch, Submission 133, p 6.

15 Guyra Shire Council, Submission 15; District Council of Grant, Submission 38.

16 Ms Roslyn Joseph, Submission 32.

given work in increasing levels, why then are redundancy numbers so high when the work is obviously still there to do? (NB. All figures used have been checked as closely as possible but should only be used as an approximation.)[17]

3.14 During public hearings by the Environment, Communications, Information Technology and the Arts Legislation Committee in relation to the Telstra (Transition to Full Private Ownership) Bill 2003 the NSW branch of the CEPU was asked to provide further information about employment levels in the telecommunications industry:

> The Table below represents the CEPU's best estimation of staff numbers in the major carriers at three points of time:
>
> 1. Prior to the introduction of (limited) carrier competition
>
> 2. Prior to the commencement of the job reduction programme that accompanied partial privatisation of Telstra and prior to full market liberalisation
>
> 3. At June 2003[18]

Company	Staff 1990	Staff 1996	Staff 2003
Telstra	86,728	76,522	37,169
OTC	3,000 (est)	n/a	n/a
Optus	n/a	4,500 (est)	8,609
Vodafone	n/a	1,000 (est)	1,742
TCNZ/AAPT	n/a	400 (est)	1,650
Hutchison	n/a	n/a	1500 (est)
Other carriers	n/a	n/a	3,000 (est)
TOTAL	89,782	82,422	53,670

3.15 The CEPU noted that the fall in staff numbers has been accompanied by growth in contractor employment but estimated that the current number of staff still falls

17 Communications, Electrical and Plumbing Union, Queensland Branch, Submission 139.

18 Communications, Electrical and Plumbing Union, NSW Branch, Submission 134a to the Senate Environment, Communications, Information Technology and the Arts Legislation Committee inquiry into the Provisions of the Telstra (Transition to Full Private Ownership) Bill 2003.

below the 1990 and 1996 figures. While improved efficiency in the industry could be expected to lead to a fall in the number of staff employed, it might have been expected that the growth of the industry over the same period would have largely counterbalanced that effect. The evidence presented by the CEPU suggests that staff numbers have been reduced to the point where there may be insufficient staff to properly maintain the network.

Seal the CAN

3.16 Another area of concern raised by the CEPU related to possible deterioration of cables in the Telstra network as a result of an unsuccessful program to seal these cables from moisture damage. The CEPU outlined this issue in its submission:

> In the mid-1990s Telstra embarked on a programme to "seal" the Customer Access Network i.e. to surround joints with a (supposedly) protective gel
>
> a) to help prevent moisture entering the network at these points
>
> b) to prevent both the need for and adverse consequences of constant intervention in the network at these same points.
>
> The initiative was intended to reduce the fault rate and hence allow ongoing labour shedding without jeopardising network reliability. The effect has been the opposite.
>
> It has now become apparent that the gel used by Telstra reacts with moisture to break down cable insulation. Moisture is always likely to be present in underground cable to some degree, as over time even modern sheathing is permeable. Moreover the older the cable, the more likelihood there is of leaks occurring along it (i.e. at places other than the joints). This will result in increased fault levels not only at the joints but at other points of the network as the gel seeps along the cables and encounters moisture further along the cable run. The problem is being exacerbated by the air pressure maintenance difficulties discussed below.
>
> Use of the product has been discontinued, but large amounts of cable are now being exposed to corrosion as a result of the programme. Diagnosis of the resulting faults is complicated by the facts that
>
> (a) they are not necessarily at the joints and
>
> (b) as the fault arises from a chemical reaction rather than a mechanical fault/failure, its location may not be easily identifiable.
>
> The union believes that problems arising from the "Seal the CAN" project are widespread. However they are particularly likely to affect country areas

as these were targeted by the programme to address higher rural fault rates.[19]

3.17 During the Committee's public hearings, witnesses elaborated on the effects of this situation on the reliability of the CAN. The Committee heard evidence that faults ascribed by Telstra to storm damage can often be traced to this problem:

> One of the things that the management of Telstra are pushing quite strongly is that the problems were caused purely by lightning. It is the view of my members, and the union, that the major cause of the problems was not the lightning but the state of the network in particular, the problems that have been caused by the so-called 'Seal the CAN' process that Telstra went through some years ago. The minute that there is a bit of rain or bad weather the faults come in thick and fast. The management of Telstra will indicate that they have never seen storms like it or so many faults come in and that it was because the storm was so severe. It is my belief and the belief of my members who were out there fixing these faults that, although the storm was a fairly significant one, the root cause behind the numbers of faults that they got which were record levels, and there are no records in the past that go anywhere near them was the lack of upkeep of the network and the problems caused by the flawed 'Seal the CAN' episode.[20]

> It is not always easy to find the fault in these circumstances. In fact, it is quite a worry in Northern Australia where you have, obviously, wet and dry seasons. The fear is that in the wet the potential for a large number of faults to occur is extremely high. We are particularly lucky, in my view, that we are currently undergoing a drought. It is hard to estimate what the long-term effect of the gel might be. I think that is a 'suck it and see', to be quite frank. I know Telstra has put a bright light on it and suggested that all is well, but our members have a great deal of fear about the long-term impacts of seal the CAN. Certainly, it is unfortunate that the whole process was not further researched before it was rolled out and people were forced to seal every joint they opened. There are even suggestions from some circles that some of the contractors that sealed the CAN actually watered down the gel.[21]

3.18 Telstra responded to these concerns during questioning by the Committee. It outlined the steps it had taken to remedy problems arising from the 'seal the CAN' program:

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19 Communications, Electrical and Plumbing Union, Submission 96, p 19.

20 Mr Paul Kelly, State Secretary, Communications Division, Communications, Electrical and Plumbing Union, Western Australia Branch, Official Committee Hansard, 9 May 2003, p 638.

21 Mr Gerry Kandelaars, Branch Secretary, Telecommunications and Services Branch (South Australia/Northern Territory), Communications, Electrical and Plumbing Union, Official Committee Hansard, 26 November 2002.

> With regards to 'seal the CAN', prior to May 2003, during the 2002-03 financial year there was a centrally managed project, managing and monitoring a portion of the total gel remediation work, which we have talked about at length at other hearings. This project reported approximately $4.6 million of expenditure on gel remediation. That in itself does not tell the whole picture, because that is the centrally managed and maintained project. As part of the work of technical servicemen and women on a daily basis, they will be remediating joints and cable joints where they see fit, to provide the quality of service that is required. That is not necessarily part of this program but it goes on continually. Under the rehabilitation program, gel joints are fixed as part of the network plant project and we are targeting fixing poorly performing plant, the focus being providing maximum customer benefit for that investment.[22]
>
> We also have stopped the process of sealing joints with the use of gel, and there is no plan to replace the gel joints across the country. As the problems are identified reactively and proactively, so we selectively replace these joints when they come up and we believe that they will become customer affecting.[23]

3.19 Telstra also indicated that it is continually looking to improve work practices and technologies in relation to the sealing of joints in cables.[24] In response to one claim made by a CEPU witness, Telstra said that it had no evidence that some contractors had watered down the gel.

3.20 The number of cables in the Telstra network which had been sealed with gel is not clear although one witness suggested that 100,000 joints are affected. The number of these joints which represent a problem in the Telstra network was the subject of some disagreement between the witnesses. The Committee notes that in the Estens report Telstra was reported as having advised that in almost all joints where it had been used, the gel continued to be an effective sealant.[25] When questioned about this issue during estimates hearings, and by this Committee during its hearings, Telstra maintained that:

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22 Mr Anthony Rix, Head, Service Advantage, Telstra, Official Committee Hansard, 7 August 2003, p. 958

23 ibid.

24 ibid., p 946.

25 Regional Telecommunication Inquiry, *Connecting Regional Australia*, p 77.

> We understand - this will not be exact - that in about 97 per cent of cases that is true. But clearly there are some areas, particularly where there are high levels of humidity, where there are some concerns about it. [26]
>
> The vast majority of cases where the gel joints are in place continue to work well. Telstra still estimates that this problem contributes to approximately three per cent of all faults in the network, and that is based on the fault codes that we receive. [27]

3.21 Evidence from the CEPU suggested that the problems are much more widespread:

> I am sure that Telstra are being optimistic. One would expect them to apply a bit of optimism to the problem. The problem is that this is not a short-term thing. This will go on in their network, potentially, while any of those gel-filled joints exist. It is not a simple case of identifying these joints to repair and fix; they essentially tried to seal 100 per cent of their CAN. It is almost impossible to quantify. It will take time to get a better assessment of what the long-term impacts are likely to be, in my view. In fact, they are lucky at this point in time that it has been a very dry season. It is hard to base your assessment on this year, to be quite frank. The real worry is that the fault in these types of joints is not obvious. You can go to a joint and not see a problem, because you do not actually see the physical corrosion straightaway. You will find the problems more through customer reports than through any other mechanism. It is very hard to quantify what the long-term impacts might be, as I said.[28]
>
> The union believes there are over 100,000 joints in this country that have sealant gel in them. Most of these, once they have water in them, are breaking down and affecting the customer, and massive amounts of work are there to be done.[29]

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26 Mr Bill Scales, General Manager, Corporate and Human Resources, Telstra, Committee Hansard, Senate Environment, Communications, Information Technology and the Arts Legislation Committee, 20 November 2002, p 17.

27 Mr Anthony Rix, Head, Service Advantage, Telstra, Proof Committee Hansard, 7 August 2003, p 958.

28 Mr Gerry Kandelaars, Branch Secretary, Telecommunications and Services Branch (South Australia/Northern Territory, Communications, Electrical and Plumbing Union, Committee Hansard, 26 November 2002. p 78.

29 Mr Shane Murphy, Branch Organiser, New South Wales Postal and Telecommunications Branch, Communications, Electrical and Plumbing Union, Committee Hansard, Senate Environment, Communications, Information Technology and the Arts Legislation Committee inquiry into the provisions of the Telstra (Transition to Full Private Ownership) Bill 2003, 1 October 2003, p 20.

Air pressure maintenance

3.22 Another method which is used to protect copper telecommunications cabling from the effects of moisture is the use of air under pressure. Concerns have also been raised about the maintenance of these cables. The CEPU outlined its concerns on this issue in its submission:

> The CEPU estimates that some 70-80% of main cables are air-filled.
>
> The air for the cables comes from a compressor in the exchange and/or compressed air bottles which can be deployed locally (e.g. in a manhole) in the event of a leak. (Use of bottles should be a short-term remedial action only.) A system of alarms is designed to alert staff to any fall in cable air pressure.
>
> The maintenance of cable air pressure is central to the protection of cables that are not jelly-filled. It also serves a diagnostic purpose, as a fall in air pressure may indicate a leak at a joint or a hole/break in the cable.
>
> The maintenance of air pressure was until recently a specialised function within Telstra (Telecom/PMG). However, the section responsible for responding to air pressure alarms (the Cable Pressure Alarms Systems [CPAS] group) was disbanded in 2000-2001 and the function contracted to Network Design and Construction (NDC), Telstra's stand-alone construction wing. Little encouragement was given to the skill base to transfer to NDC – a fact which, in the CEPU's view, reflected an underestimation of the importance of the cable protection function. NDC has itself been "downsized" since that time.
>
> The CEPU believes that cable pressure maintenance is now seriously under-resourced and poorly co-ordinated with other diagnostic and maintenance functions. For instance, since December 2001, after hours and weekend compressor maintenance has been abandoned. Alarms that occur during these periods are simply not attended to until normal working hours have begun, so that a faulty cable could be losing pressure for two days without the problem being addressed.
>
> Moreover, it is increasingly the case that staff allocated to attend to air pressure problems will be required to provide a "quick fix" (in the form of a gas bottle), without the underlying cable fault being addressed. Even if staff had the time and authority to deal with the cable repair job, they may lack the specialist knowledge to do so (e.g. jointing skills).
>
> The impacts of these air pressure maintenance problems are widespread. The Union believes, for instance, that one in five main cables in Sydney are without proper air pressure.[30]

30 Communications Electrical and Plumbing Union, Submission 96, p 20.

3.23 Union representatives expanded on the nature and extent of this problem during the Committee's hearings:

> I am aware that there is quite a lot of usage of dry air bottles along cables to try and maintain the pressure along the cable lengths. That is an indication that not enough has been spent to make sure that the main cables are adequately sealed. It is a short-term measure to overcome the sealing of the main cables.[31]
>
> I have here a document which is obviously from the Network Design and Construction Business Unit, which is a company within Telstra, which has now gone in-house. This report clearly identifies how many bottles right throughout New South Wales are being used on main cables, where they are not sending staff out. If a problem such as a leak in their main network were identified, the normal process would be to send out a staff member to put a bottle on it to keep the air pressure up and keep the water out.
>
> What occurred in the past, and when I say 'the past' I mean probably pre-1997, is Telstra had a program to find and fix leaks. They therefore removed the bottles, and the compressor at the exchange took over. What is occurring now, and again this is through lack of money for capital expenditure and investment, is bottles and bottles and bottles sitting across all parts of the network, propping it up, and Telstra are not going back and fixing the network. In our view, once it does rain, Telstra customers throughout rural and regional Australia will experience a massive amount of outages where they will not have phone services. I will give you an example. I cannot quote exactly how many main cables are in Dubbo, but in my report here there are 15 cables that are not up to the prescribed Telstra standard in Dubbo alone.
>
> … No program is in place to rectify the problem. The CEPU's major concern is that, if that is the state the main cables are in now with no money being spent on fixing problems with them since 1997, what will happen to them once Telstra is fully privatised?[32]

3.24 The evidence received by the Committee also directly linked the failure to maintain air pressure in cables with the declaration of MSD's:

> We have got some print-outs here of the Albion Park cables, for example, regarding the mass service disruption. When those 400 customers lost

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31 Mr Gerry Kandelaars, Branch Secretary, Telecommunications and Services Branch (South Australia/Northern Territory, Communications, Electrical and Plumbing Union, Committee Hansard, 26 November 2002. p 71.

32 Mr Shane Murphy, Branch Organiser, New South Wales Postal and Telecommunications Branch, Communications, Electrical and Plumbing Union, Committee Hansard, Senate Environment Communications, Information Technology and the Arts Legislation Committee inquiry into the provisions of the Telstra (Transition to Full Private Ownership) Bill 2003, 10 October 2003, p 61.

> service in February, it was because the main cable went down. It did not have enough air pressure in it and the water got in, and that is the reason it went down. Since Ms George has been raising the issue at Albion Park, NDC have had four people working to try and repair the holes in the Albion Park cables. Telstra have said to the contracting company, NDC, that they wish to have at least 40 kilopascals of air in each main cable. The print-outs that we have got in front of us indicate there are still not many cables in Albion Park that have over 40 pound of air pressure in them as we speak. Cable 3 in Albion Park has got 12 kilopascals of pressure in it. If you look through the data we only received it yesterday it shows that the standard right across Australia, where there are 18,000 of these cables under pressure, means that there could be up to one in five that are flat and have not got enough pressure in them.[33]

Carrier performance statistics

3.25 This anecdotally based evidence about problems in the Telstra network should be viewed in the context of Telstra's overall performance. The ACA reports regularly upon the performance of Telstra under the Network Reliability Framework. In its June 2003 report on carrier performance the ACA reported that:

> Telstra's performance shows that on average 99.06 per cent per cent of all Telstra's telephone services did not experience a fault from January to August 2003. Performance was slightly better in capital city areas (99.20 per cent) compared with non-city areas (98.99 per cent).[34]

3.26 At first glance these figures appear to be reasonably acceptable. They appear to suggest that over the eight month period canvassed, less than one per cent of all telephone services experienced a fault. However, a closer examination of the report shows that this is an average of the monthly fault rates. To determine the percentage of faults over a twelve month period would require aggregating the total number of faults over that period from the monthly statistics.

3.27 During questioning by the ECITA Legislation Committee, the ACA agreed that this was the correct way of interpreting the figures and suggested that:

> If these were different services that had a fault each month then you could add them up and, at the end of the year, you would have roughly 12 times

33 Mr Steve Dodd, Union Organiser, Communications Union Branch, Communications Electrical and Plumbing Union, Committee Hansard, 11 October 2002, p 16.

34 Australian Communications Authority, *Telecommunications Performance Monitoring Bulletin*, Issue 25, June 2003 Quarter, p 3.

> the number of faults of any one month. That is fine. There is nothing wrong with that deduction.[35]

3.28 In a subsequent submission to that Committee, the ACA clarified this issue further:

> Figures published in a table in the most recent Bulletin (on page 29) included the national average for services without a fault for May (98.97 per cent), June (99.18 per cent) and July (99.12 per cent). This gave a year-to-date monthly average of 99.06 percent. The heading of the column where this figure appears in '2003 average', which has been interpreted by some readers as a yearly average rather than a year-to-date monthly average. This heading will be changed in future Bulletins to avoid the possibility of confusion.
>
> While the recently published fault performance figure of 99.06 per cent is a year-to-date monthly average, it obviously implies a lower annual performance figure. However, it will not be possible for an actual figure to be reported until the figures for the full 12 months are available.[36]

3.29 Under level 2 of the Network Reliability Framework the ACA also monitors performance in Telstra exchange service areas (ESAs). Telstra is required to report to the ACA every month on ESAs where the number of faults has exceeded a threshold level. The ACA has reported that on average less than 3.5% of Telstra's ESAs have reached the threshold for reporting to the ACA in each period. To date the ACA has received 1571 reports on 902 different ESAs and has conducted further investigation and analysis on 77 ESAs based on these reports.[37] The ACA has said that:

> The ACA's analysis has shown that generally, Telstra has implemented appropriate processes and actions in order to identify the causes of service difficulties and minimise recurrence.[38]

3.30 In its Performance Monitoring Bulletin for the December quarter of 2003 the ACA reported that an average of around 99.1 percent or services had not experienced

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35 Dr Robert Horton, Acting Chairman, Australian Communications Authority, Committee Hansard, Senate Environment Communications, Information Technology and the Arts Legislation Committee inquiry into the provisions of the Telstra (Transition to Full Private Ownership) Bill 2003, 7 October 2003, p 39.

36 Australian Communications Authority, Submission 166 to the Senate Environment Communications, Information Technology and the Arts Legislation Committee inquiry into the Provision of the Telstra (Transition to Full Private Ownership) Bill 2003.

37 Australian Communications Authority, *Telecommunications Performance Monitoring Bulletin*, Issue 26, September 2003 Quarter, p 12.

38 ibid.

a fault in each month over the last year.[39] In its September Bulletin the ACA noted that an annual figure cannot be derived from this data because some services may have experienced a fault in more than one calendar month.[40] However, in the December Bulletin the ACA provided an estimate that 89.73 per cent of services did not experience a fault in 2003.[41]

3.31 The Performance Monitoring Bulletin also showed considerable variations between different areas. The ACA estimated that annual fault free performance ranges from a low 78.9 per cent in the Northern Territory Top End area up to 97.5 per cent in the Brisbane City and Technology area.[42] Although the ACA did not publish annual estimates for each region, the monthly figures show that most of the best performing areas are urban while the worst performing areas are in regional New South Wales, Western Australia and Queensland.[43]

3.32 Another picture of the state of the Telstra network is presented in internal Telstra documents which were tabled in the House of Representatives on 10 March 2003. This document showed that annual fault rates in the customer access network began rising sharply during the first half of 2002 and had reached a ten year peak of approximately 12.8% by December 2003. The document went on to say that:

- Without adequate investment in rehabilitation, the CAN Fault Rate will continue to increase incurring additional operating expense and increasing the risk of NRF breaches requiring mandatory rehabilitation action

- Since 2002/03 a prime objective, as agreed with capital sponsors, has been to keep the fault rate constant. Funding levels have not supported this.44

3.33 In summarising the fault related performance of the CAN Telstra's internal documents said, in part, that:

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39 Australian Communications Authority, *Telecommunications Performance Monitoring Bulletin*, Issue 27, December 2003 Quarter, p 9.

40 Australian Communications Authority, *Telecommunications Performance Monitoring Bulletin*, Issue 26, September 2003 Quarter, p 10.

41 Australian Communications Authority, *Telecommunications Performance Monitoring Bulletin*, Issue 27, December 2003 Quarter, p 9.

42 Australian Communications Authority, *Telecommunications Performance Monitoring Bulletin*, Issue 27, December 2003 Quarter, p 9.

43 ibid., p 26.

44 Telstra Business & Commercial Operations Infrastructure Services, December 2003, Tabled in the House of Representatives 10 March 2003.

- Fault rate growth appears to be due to general network deterioration rather than a specific exceptional cause

- The current accelerating fault rate can be attributed to reduced rehabilitation activity in the recent past coupled with an intensive focus on providing quick fault restoration driven by performance imperatives and OPEX budget constraints

- Well targeted, large scope, mainly CAPEX based, rehabilitation projects will address chronic fault tails[45]

3.34 The Committee also noted that the ACA's Performance Monitoring Bulletins have shown a consistent increase in the percentage of faults not repaired by Telstra within the CSG timeframes:

Percentage of faults not repaired by Telstra within CSG timeframes[46]

Category	June 01	Dec 01	June 02	Dec 02	June 03
Urban areas	8	11	14	11	18
Rural areas	5	6	7	6	8
Remote areas	13	6	3	6	6
National	7	9	12	9	14

(Source: ACA Telecommunications Performance Monitoring Bulletin)

3.35 The ACA's figures for the June quarter of 2003[47] showed that Telstra failed to rectify 14 per cent of faults within the timeframe set out in the Customer Service Guarantee; and failed to make nine per cent of new connections within the CSG timeframe. In response to questions from the Committee the ACA agreed that these levels were of concern:

> We indicated in the last two reports that we were concerned about the level of performance in relation to urban faults, which you also in part referred to. We have addressed those issues with Telstra and sought assurances from

45 ibid.

46 Senator John Cherry, *Australian Democrats Minority Report*, Environment Communications Information Technology and the Arts Legislation Committee, *Provisions of the Telstra (Transition to Full Private Ownership) Bill 2003*.

47 Australian Communications Authority, *Telecommunications Performance Monitoring Bulletin*, Issue 25, June 2003 Quarter.

> them that they will take the necessary steps to raise the level of performance.[48]

3.36 The more recent ACA bulletins showed an improvement in the results for the September quarter followed by a decline in the December quarter when 91 per cent of connection requests were completed within the CSG timeframe and 91 per cent of faults rectified within the CSG timeframe.[49] While the Committee is pleased to note that there has been some improvement in Telstra's fault rectification performance, it continues to be concerned about both the high levels of failure to meet the CSG timeframes and the direction of the ongoing trend. The September ACA bulletin showed a declining trend for annual performance for new service connections in major rural areas, minor rural areas and remote areas, and for fault clearance.[50]

Payphones

3.37 The ACA also monitors the performance of Telstra in meeting its service standard targets for payphones under its USO standard marketing plan. The targets state that payphones in urban areas should be repaired by the end of one full working day after Telstra is notified of the fault; by the end of two full working days in rural areas; and by the end of three full working days in remote areas. In the September 2003 quarter Telstra repaired 86 per cent of faults in urban areas, 82 per cent in rural areas, and only 59 percent of payphones in remote areas within the specified timeframes.[51] The figures reported in the following quarter's ACA bulletin appear to show a significant improvement to 90.5 per cent of faults in urban areas, 86.9 per cent of faults in rural areas and 72.9 per cent of faults in remote areas.[52] However, it is unclear whether there has been any actual improvement because:

> Telstra has advised the ACA that its reporting measures for payphone fault repairs have changed for the December 2003 quarter as a result of monitoring system upgrades, making it difficult to draw comparisons

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48 Mr John Neil, Executive Manager, telecommunications Analysis Group, Australian Communications Authority, Committee Hansard, Senate Environment Communications, Information Technology and the Arts Legislation Committee inquiry into the provisions of the Telstra (Transition to Full Private Ownership) Bill 2003, 7 October 2003, p 37.

49 Australian Communications Authority, *Telecommunications Performance Monitoring Bulletin*, Issue 26 September 2003 Quarter, pp 4-5.

50 ibid., pp 5-6.

51 Australian Communications Authority, *Telecommunications Performance Monitoring Bulletin*, Issue 26, September 2003 Quarter, p 18.

52 Australian Communications Authority, *Telecommunications Performance Monitoring Bulletin*, Issue 27, December 2003 Quarter, p 16.

> against previous quarters. The ACA will require Telstra to use a consistent measurement method for future quarterly reports.[53]

3.38 In March 2004 the ACA published a review of payphone policy. In its report, the ACA expressed concern about the reliability of Telstra's payphones:

> … the overall reliability of Telstra's payphones and its fault repair performance is poor in remote Australia, especially but not only in remote Indigenous communities. There are steps that Telstra can and should undertake to improve the reliability of its payphones. The ACA will undertake closer monitoring of USO performance by Telstra in these target areas.[54]

Conclusion

3.39 The Telstra fixed line network remains the main backbone of the Australian telecommunications network. Any unreliability or deterioration in the network has the potential to seriously impact both the affected individuals and the overall economy. In light of this the Committee is concerned about the current level of faults and the frequent failure of Telstra to meet the timeframes set out in the CSG.

3.40 Telstra's own internal documents support the claims that fault rates are rising as a result of general network deterioration, a focus on providing quick fixes, and inadequate CAPEX expenditure.

3.41 The evidence the Committee has received about the standard of maintenance of the network is of considerable concern. If Telstra's fixed line network is allowed to deteriorate as a result of stop gap repairs and inadequate maintenance the subsequent problems may not become immediately apparent, but are likely to show up in the future:

> You can save money in the short term. As we all know, it is like a motor vehicle. You can go on driving it and it will cause you no problem, but finally lack of maintenance will catch up with it. Unfortunately, over the last few years, maintaining returns to shareholders, et cetera, has been at the cost of the maintenance and infrastructure bill.[55]

3.42 The Committee is concerned that, should Telstra be fully privatised, its board and management will be exposed to increased pressure to bolster its short term profitability to the detriment of the long term reliability of the network. The current

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53 ibid., p 16.

54 Australian Communications Authority, *Payphone Policy Review*, 2004, p 2.

55 Mr Gerry Kandelaars, Branch Secretary, Telecommunications and Services Branch (South Australia/Northern Territory, Communications, Electrical and Plumbing Union, Committee Hansard, 26 November 2002, p 73.

measures in place to monitor the reliability of the network only measure current fault rates. They do not examine the state of the infrastructure and are unable to identify and rectify the long term problems which have been brought to the Committee's attention.

Chapter 4

Access programs

The universal service obligation

4.1 The Universal Service Obligation (USO) is effectively the safety net in the Australian telecommunications system that ensures that a minimum standard of telecommunications services is available to all Australians irrespective of their location.[1] The USO was strongly supported by many witnesses:

> I think without the USO there would not be one telephone service in remote communities. As I mentioned, it is not a commercially viable environment for any operator to operate in at this stage, and it is not worth their investment to try and encourage the use by the community of telecommunications and generate a market. So the USO is absolutely essential for remote areas where competition policy will not deliver telecommunications policy.[2]

> The USO is clearly a very important mechanism for ensuring all Australians have equitable access to a standard telephone service. Optus endorses the maintenance of the USO.[3]

> I do not think we should ever consider dispensing with minimum government standards. The NFF believes that it is the government's role to ensure that minimum service standards are in place for both voice and data telephony and that they should continue.[4]

4.2 Many witnesses, while supporters of the USO, expressed concern that it is inadequate and needed to be upgraded. Their concerns primarily focused on its emphasis on voice services and the need to extend its scope to keep pace with technological advances, especially as these relate to data services:

> What we would recommend for a USO is simply upgrading the level so that there is recognition that we have moved beyond a telephone service, which is still an issue in some areas – we know that. It is important for people to be able to be online, largely for Internet access and for what it can do.[5]

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1 The USO is more fully described in Appendix 5.

2 Mr Les Hodgson, Northern Territory Government, Committee Hansard, 28 March 2003, p 285.

3 Ms Judy Anderson, SingTel Optus Pty Ltd, Committee Hansard, 6 December 2002, p 259.

4 Mr Mark Needham, National Farmers Federation, Committee Hansard, 6 December 2002, p 273.

5 Ms Helen Scott, Council on the Ageing, Committee Hansard, 26 November 2002, p 57.

> The universal data service obligation (USDO) to rural and regional areas of 19.6kb is well below that expected and received by city consumers. It is also below the data acceptance level of Internet Service Providers (ISPs).[6]
>
> There is a role for regulation and a role for grants. As regulation has failed, we have become more reliant on grants, such as the USO. In rural and remote areas, as mobile phone and data services are becoming as important as voice services, the current DDSO is inappropriate.[7]
>
> The universal Service Obligation mandates the provision of an analogue telephone service. This level of service is grossly inadequate in today's society. The USO obligations should be completely overhauled and a minimum requirement of a telephone service and a 256 kbit/s IP service should be introduced.[8]

4.3 While some witnesses recognised recent efforts to improve the USO, they acknowledged that this did not go far enough:

> A number of recent national programs that extend USO arrangements will help alleviate many of the deficiencies with current services. These programs include the introduction of untimed local calls in extended zones, local call cost for Internet access, the extension of the USO to include digital data ISDN services and the extension of mobile phone services to some smaller communities. Whilst these programs should meet the needs of many residential telephone and Internet customers they will not address the need for cost effective high capacity data communications links required for many local service providers.[9]

4.4 Not all witnesses support the USO. They pointed to what they considered to be more fundamental deficiencies than its limited scope. One such deficiency was the tendency of the USO to discourage carriers from providing more than the basic level of service mandated in the legislation:

> The USO scheme is focused on ensuring that rural consumers receive a basic level of service, by bridging financial gaps between the service which would be commercially viable and the service the government sees as essential….this encourages a lowest common denominator approach. It is not in the interest of the carries to offer extra levels of service, as they do in

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6 Ms Roslyn Joseph, Submission 32, p 1.

7 Government of Western Australia, Submission 44, p 11.

8 Communications Experts Group Pty Ltd and Community Tele-Services Australia Inc, Submission 86.

9 Northern Territory Government, Submission 48, p 6.

> the cities. If they increase the level of service, they will only increase their costs.[10]

4.5 Vodafone representatives consider existing USO arrangements provide Telstra with a competitive edge over other providers:

> While Vodafone is not questioning the social objectives of the USO, Vodafone considers that the current USO regime gives Telstra, as the provider of the USO, significant competitive advantages, including direct revenues from products and services purchased by USO customers, and the enhancement of Telstra's brand.[11]

4.6 Optus considers the USO an impediment to competition in rural and remote areas:

> The USO is one of the biggest impediments to rural and remote competition. Alternative providers must pay Telstra to deliver services to these areas before they can commence offering their own services. While Telstra's competitors pay it the $50 million [their contribution to the levy] to bolster its rural and remote network, there is a strong disincentive to invest in providing alternative telecommunications networks and services in these areas.[12]

4.7 Some witnesses suggested that the USO was not capable of fulfilling its fundamental objective of providing universal access to telecommunications and that other means should be found of meeting these social policy objective.

> In many respects, I would like the USO just to die. I think it has been a policy distraction.[13]

Suggested improvements to the USO

4.8 As noted, many suggestions for upgrading the USO related to the desirability of extending its scope. Other witnesses with more fundamental objections to existing USO arrangements had more far-reaching suggestions for improvement. One was to give incentives to carriers to provide the services now available through the USO (perhaps through competitive tendering) rather than forcing them to do so through legislation:

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10 Attachment to Submission 67, Mr Chris Dalton and Mr Mark Armstrong *Rural Telecommunications Policy Reform*, p 2.

11 Vodafone Australia, Submission 90, p 4.

12 Optus, Submission 91, p 20

13 Mr Christopher Dalton, Committee Hansard, 19 May 2003, p 715.

> …the legislative mechanisms are just too slow. That is why I go back to a competitive tendering sort of arrangement, and I think the government's policy of a $150 million bid for untimed calls and extended zones was exactly the way to go, because Telstra, or whoever was the winner, had to volunteer additional services. You can set a benchmark whereby you are effectively providing incentives to carriers to provide services rather than beating them with a stick to make them provide services.[14]

4.9 Other suggestions related to better ways of funding the USO. One suggestion was that it should be directly funded by government.

> …the USO is a *social policy* which needs to be funded by the total Australian tax base, and fund it that way- and stop discriminating against new broadband carriers by expecting them to carry the continued support of this social policy regime for the provision of voice telephone services.[15]

> We do not believe that the funding should come from the industry. If Telstra is the universal service provider, that is well and good. Universal service may well be necessary in some uneconomic areas of the country, but it is about us funding Telstra. If it is a government social policy objective to provide services to these areas, then funding should come from consolidated revenue.[16]

4.10 Another suggestion was that Telstra itself should fund it:

> Consumers, competition and regional Australia would be better served by making Telstra liable for the whole of the USO. While this would comprise a significant policy shift, it would recognise the significant competitive imbalance that exists in regional areas, an imbalance that has been positively supported by regional policies of government since de-regulation. [17]

4.11 Whether Telstra itself funds the USO or whether existing funding arrangements continue, it was suggested by Optus that the real benefits of the USO to Telstra should be adequately costed to ensure that there is no cross-subsidisation from other carriers:

> … we think there is a very good case that other carriers should not have to cross- subsidise Telstra for the provision of USO services, not only because of the very detrimental impact it has on competition and providing incentives for us to deliver services in regional areas but also because of …the fact that there is no consideration in the USO costing of the intangible benefits that Telstra receives from being the USO provider. In the UK those

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14 Mr Christopher Dalton, Committee Hansard, 19 May 2003, p 717.

15 Agile Pty Ltd, Submission 136, Attachment A, p 8.

16 Ms Georgia-Kate Schubert, Vodafone, Committee Hansard, 28 March 2003, p 293.

17 Optus, Submission 91, pp 21-22.

> benefits have been costed so that the benefit offsets the cost. British Telecom is the universal service provider and there is no cross-subsidy from carriers. At the very least, in the Australian context there needs to be a rigorous study as to the amount of these intangible benefits, to look more carefully and realistically at the USO costing.[18]

4.12 It was suggested that in the current debate about costs, Telstra had little incentive to reduce its cost estimates and other carriers had little incentive to agree to an increase in cost estimates.[19] Increasing the USO subsidy amount until there is real competition in USO contestability was suggested:

> In this situation, the subsidy would no longer be a reimbursement of a loss. Instead, it would become an incentive to provide a service, with those choosing not to provide a service making the judgement that the loss they might incur in providing the service would be greater than the cost of the USO levy to subsidise another carrier to provide the service.
>
> This strategy of increasing the USO subsidy to establish competition in the provision of services would lead to a more equitable sharing between carriers of the USO losses incurred by Telstra or an increase in the range of services offered to consumers. Both outcomes are desirable.[20]

Review of the USO

4.13 On 1 December 2003 the then Minister for Communications, Information Technology and the Arts, the Hon Daryl Williams MP, announced a review of the operation of the USO. In announcing the review the Minister said that:

> The review will address two specific recommendations from the RTI. These relate to the current arrangements for costing and funding the USO and whether network extension and trenching costs are impeding access to USO services.[21]

4.14 On 17 June 2004 the Government released its report on the review of the operation of the USO.[22] The review found that the current model for funding the USO is no longer viable in its current form and, after reviewing several options, suggested

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18 Mr David McCulloch, SingTel Optus Pty Ltd, Committee Hansard, 6 December 2002, p 266.

19 See Attachment to Submission 67, *Rural Telecommunications Policy Reform*, Chris Dalton and Mark Armstrong, pp 51-51.

20 Mr Chris Dalton and Ms Ros Hill, Submission 67, Part 3, p 51.

21 The Hon Daryl Williams, Minister for Communications, Information Technology and the Arts, News Release, 1 December 2003.

22 Department of Communications, Information Technology and the Arts, *Review of the Operation of the Universal Service Obligation and the Customer Service Guarantee*, 7 April 2004.

that the preferred approach would be to require Telstra, as the primary universal service provider, to fund all cost associated with fulfilling the historic telephony USO. The review stated that this approach has the lowest administrative costs, the least complexity, the greatest certainty and the fewest practical risks. It further suggested that the equity concerns raised by this approach could be partially addressed through a requirement that parts of industry that qualify make some other contribution to services in regional Australia.[23]

4.15 With regard to trenching costs the review found that current trenching arrangements should remain in place and that any undue burden of trenching needs on particular disadvantaged customers could be more efficiently supported through transparent and targeted funding arrangements.[24]

The Digital Data Service Obligation

4.16 The *Telecommunications (Consumer Protection and Service Standards) Act 1999* imposes the Digital Data Service Obligation (DDSO) on the universal service provider. The DDSO requires Telstra to provide access to a digital data service equivalent to 64 kbps to 96% of the Australian population. This requirement is normally satisfied through the provision of ISDN services.

4.17 This 64 kbps requirement is clearly below even the most undemanding definition of broadband. Submissions to the review of the Universal Service Obligation suggested that the DDSO be upgraded to include even higher bandwidth services. These suggestions were rejected by the review which stated that the issue was outside of the terms of reference of the review.[25]

Summary

4.18 While the USO has been relatively effective in ensuring that fixed line voice services are available to all Australians on an equitable basis, it has failed to provide adequately for other services which are fundamental to a modern society. In particular it fails to address the need for affordable access to adequate data services.

4.19 As a statement of principle, the Committee stresses its view that all Australians should have the right to expect Government policy to ensure that they have equitable access to broadband services irrespective of where they live.

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23 Department of Communications, Information Technology and the Arts, *Review of the Operation of the Universal Service Obligation and the Customer Service Guarantee*, pp 158-159.

24 ibid., p 195.

25 ibid., pp 48, 53.

Government programs to improve services

4.20 Since the introduction of the current regulatory regime in 1997 the Government has introduced a range of programs aimed at improving telecommunications services. Despite the benefits of these programs to some consumers there are drawbacks in the way that many of the programs have operated.

4.21 Most of these programs have been operated in conjunction with Telstra, with Telstra as the successful tenderer, or with Telstra being involved in many of the individual projects funded under the program.

- Telstra was the successful tenderer for the Extended Zones Program under which $150 of Commonwealth funding was provided to gives customers in the extended zones access to untimed local calls over a wide area and a two-way satellite based Internet service.

- Telstra was awarded a $22 million dollar contract under the Governments program to improve mobile phone coverage for towns with a population of 500 or more.

- Under the Regional Mobile Phone Program Telstra was awarded a $19 million contract to provide improved mobile phone coverage on regional highways, a $19 million contract to provide mobile coverage for 55 towns with populations under 500, and $7 million towards the WirelessWest project.

- The Internet Assistance Program was aimed at improving dial-up access speeds over the Telstra network and was jointly funded by Telstra and the Commonwealth.

- Telstra is one of the participating satellite mobile phone service providers under the Satellite Phone Subsidy Scheme.

- Telstra was involved in projects funded under the Networking the Nation and Building Advance Rural Network programs

- Several of the initiatives under the Telecommunications Action Plan for Remote Indigenous Communities have been carried out in conjunction with Telstra.

4.22 In each case these programs were of benefit to the users of telecommunications services and there were reasons for the involvement of Telstra. However, the effect of Telstra's involvement in these programs is to enhance its position as the dominant carrier in the Australian telecommunications industry. In the view of the Committee Government programs should be about helping to foster competition, as well as helping people.

4.23 Another serious deficiency in many of these programs is that they have limited funding or a limited timeframe. The Coorong Communications Project was funded through the Networking the Nation program.[26] It resulted in the development of new end-to-end infrastructure for broadband data and voice services delivery into the Murray Bridge and Coorong regions of rural South Australia.[27]

4.24 Further expansion of that successful model across much of regional South Australia was envisaged by various community and local government groups in South Australia. However, the NTN program ended and funding under the Building Advance Regional Networks program was not forthcoming:

> Grant applications have been made to the successor to NTN in this context, a fund called BARN ("Building Additional Regional Networks'). The BARN fund cited the Coorong network as an example of the intended deployment of BARN grant funding.
>
> Unfortunately, years of repeated attempts to fund these extensions of this successful project into new geographic areas have, to date, been unsuccessful.
>
> The reasons for this lack of success are a source of mystery and frustration to the communities concerned. The extent and severity of this situation are documented in my submission to the BAG process (Appendix A) and in more specific detail about the problems with BARN grant funding processes (in Appendix B)[28]

4.25 A further issue of concern is that these programs do not provide universal benefits. While some communities benefit from extended mobile phone coverage, improved local infrastructure, or government subsidies, other communities are left out.

National Broadband Strategy

4.26 In response to some of the recommendations of the Rural Telecommunication Inquiry and the Broadband Advisory Group the Government has developed a National Broadband Strategy. The key elements of that strategy are:

- $2.9 million over four years to fund the National Broadband Strategy Implementation Group;
- $8.4 million to fund demand aggregation brokers;

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26 The Coorong projects is discussed further in Chapter 6.

27 Agile Communications, Submission 136.

28 ibid.

- $23.7 million in catalytic funding over four years to accelerate the roll-out of broadband in regional Australia using key sectors such as health, eduction and local government as anchor tenants; and

- $107.8 million over four years for the Higher Bandwidth Incentive Scheme (HiBIS).

4.27 HiBIS is intended to promote equitable access to broadband services by providing one-off 'per customer' payments to service providers who provide eligible customers with higher bandwidth services of a specified minimum functionality at prices comparable with those available in metropolitan areas. The key elements of the proposed scheme are:

- it will apply outside metropolitan areas and those areas that have ADSL access at metropolitan prices;

- the price of the 'benchmark' service will need to be comparable to the price of such a service in metropolitan areas;

- eligible consumers will be residential, small businesses, small not-for-profit organisations and certain public access facilities;

- providers can use any technology - eg. cable, digital subscriber line (DSL), wireless local loop (WLL) or satellite; and

- providers will have to offer a 'benchmark' 256/64 kbps service.

4.28 On 8 April 2004 Telstra issued a press release highlighting its intention to use the HiBIS scheme to extend broadband coverage to more locations and claiming that the scheme 'aims to further extend Telstra's BigPond Broadband ADSL roll-out'.

> "The Government's innovative HiBIS scheme will assist the provision of broadband services to rural and remote Internet users on a more affordable basis," he said.
>
> "We will be able to extend BigPond" Broadband ADSL to more locations, and those who live beyond the reach of ADSL will have access to significantly lower satellite Internet prices as a direct result of the Government's support program.
>
> "ADSL will soon be within the reach of more communities because, in areas covered by the scheme, there should be a reduction in the number of people needed to register their demand in order to make an exchange upgrade commercially viable.
>
> "The Telstra ADSL Demand Register was established to give communities the opportunity to trigger the roll-out of ADSL to their towns or additional exchanges. A number of communities have already successfully achieved this as a result of the scheme. The Government's HiBIS scheme aims to

> further extend Telstra's BigPond" Broadband ADSL roll-out," Mr Campbell said.[29]

4.29 The Committee welcomes any development which makes higher speed data services available to more consumers. However, it seems that, once again, a publicly funded scheme is likely to result in Telstra's dominant market position being further consolidated.

The 'doughnut'

4.30 One effect of the application of Government programs to particular geographic areas is what was described to the Committee as the 'doughnut'. This term describes areas which have poor telecommunications services because they lie beyond the more densely populated areas of Australia, but do not lie in the remote areas where many Government programs are focussed.

4.31 Since July 2001 customers in the extended zones have had improved access to telecommunications as a result of a Commonwealth Government agreement with Telstra to provide the residents of Telstra's remote extended zones with untimed local calls within their zone, to neighbouring zones and to the community service town they use to access the various community services they need. Improved Internet services are also part of the agreement. There are 111 Extended Zones covering about 80 per cent of the Australian landmass, containing about 40,000 services.

4.32 During the Committee's inquiry it frequently heard from consumers who were located outside the better-served metropolitan areas and regional centres, but who did not live in an Extended Zone. These consumers often have very poor telecommunications services but are ineligible for the special assistance available to their neighbours in the Extended Zone. This area was often described as the 'doughnut' - not close enough to an exchange perhaps to access ADSL, not remote enough to gain access to the Government's assistance package for improved telecommunications services. While the concept and geographical area of the doughnut may be imprecise due to localised factors, its existence has a very definite impact on the lives of those who reside and work within it.

Problems for consumers

4.33 The lack of subsidy for people living in this area as compared with those living in rural and remote areas, and the costs faced as a result of a lack of subsidy, were the two main concerns expressed on behalf of those living within the doughnut:

> A problem with many of those discount schemes is that they have been targeting people in extended zones. We do not disagree with that, but it has left very disadvantaged people and businesses that are not in extended zones but are outside the reach of ADSL and ISDN. We call them the doughnut.

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29 Telstra, *Telstra's major push to broadband the bush*, Media Release, 8 April 2004.

> There is a considerable issue with doughnuts: people who cannot access terrestrial high-speed Internet, not even broadband, and yet do not qualify for any subsidies that are offered.[30]
>
> In country Western Australia, if you live within four kilometres of an exchange in a town of over 5,000 population, you can access broadband. It is the people who live more than four kilometres from the exchange and live in a Standard Zone who are the most disadvantaged with respect to broadband access. Those who live in Extended Zones qualify for a subsidy for broadband access.[31]

And:

> Satellite broadband services are available, but at a cost that many rural people feel is unjustifiable, both from a business and personal viewpoint. That cost is also not comparable nor equitable with that paid by city consumers.[32]

4.34 The fact that mobile phone coverage is also often inadequate for residents living within the doughnut only adds to their levels of frustration, as was frequently referred to in submissions.

Possible solutions

4.35 While the definition of the Extended Zones is a matter of Government policy, Telstra suggested that many of the problems relating to access and service quality for people within the doughnut will be overcome by new developments in technology, which led it to discourage the Committee from seeking to make any well-meaning recommendations intended to shrink the adverse effects of the doughnut phenomenon, which in time will prove unnecessary and potentially unhelpful. Telstra claimed that many consumers in this area are already benefiting from, for example, the installation of boosters to extend ISDN from approximately 4.5 kilometres from an exchange to approximately 20 kilometres from an exchange and from Telstra's decision to drop charges for booster services.[33] The installation of DSLAMs in smaller exchanges will boost ADSL coverage.

4.36 The combined effect of these developments will be, according to Telstra, to shrink the doughnut, leaving a much smaller number of people reliant on unsubsidised satellite services:

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30 Mrs Sheryl Siekierka, Western Australian Department of Industry and Resources, Committee Hansard, 9 May 2003, p 657.

31 The Government of Western Australia, Submission 44 p 7.

32 Ms Roslyn Joseph, Submission 32, p 2.

33 For a discussion of these issues see Committee Hansard, 7 August 2003, pp 924-925.

> What we see is a progression over time of improved access to this. If I go back even 12 months, we have seen a number of initiatives occur that have continued to expand the footprint where high-speed connectivity is possible. We are not at the end of that journey yet. We can provide high-speed Internet to people wherever they are at a commercial cost, and, I think, over time as we go forward, we will see further developments that will address those issues.[34]

4.37 In the longer term Telstra considers that a combination of existing and new technologies is likely to improve access and quality for all consumers:

> … a lot of work is going on now in relation to fibre to the premises … In addition to that, there are a number of interesting broadband wireless type capabilities emerging, some of which may prove in as the cost of the technology matures. We would think in the long term that, to move into serious bandwidth type capabilities, you are probably talking a combination of the fibre end, some sort of wireless infrastructure and/or satellite infrastructure, but it is probably not a universal technology.[35]

4.38 Regardless of the technology advocated or adopted, cost remains an issue. One suggestion for addressing cost issues was to extend the boundaries of the extended zone to cover people in the doughnut who would then be eligible for government subsidies.

> Telstra has also provided subsidised satellite services for an extended zone for those regional consumers with less than 19.2kilobits per second. There is a consumer equity issue as to why a pastoral station in the Murchison can access this subsidy but a user in a small regional town in the south-west cannot, despite similar poor download access speeds and no access to other broadband services. The extended zone is limited to pastoral areas in the country and must be expanded to cover regional areas that cannot meet the benchmark speeds of 19.2.[36]

4.39 Telstra pointed out that while changes to the definition of the extended zone might solve some problems, it was equally likely to produce others:

> It is always a challenge once you start drawing lines on a map – there is always one side of the line and the other side of the line. It is interesting because, historically, people argued strenuously to get out of the extended zone area to allow them to get untimed local calls. Now we find people arguing just as strenuously to get back into the extended zone because that allows them access to other services. .. I think, by moving the zone, you are

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34 Mr Denis Mullane, Manager, BigPond Network Capability, Proof Committee Hansard, 7 August 2003, p 924.

35 ibid., p 930.

36 Mr Don Punch, South West Development Corporation, Western Australia, Committee Hansard, 9 May 2003, p 617.

> likely to create a different set of issues – you might eliminate one but you create others.[37]
>
> The zones were not necessarily designed at the same time as we saw these technological developments. If you then tried to accommodate a zone based around a technology and that technology changes, what would you do then?[38]

Summary

4.40 The Committee is sympathetic to the concerns of those living in the so-called 'doughnut'. The problem is substantially the result of a decision of Government policy, and one developed with commendable altruistic purpose but no doubt driven by budgetary considerations. The Committee took evidence from residents of the Extended Zones who were, not unexpectedly, supportive of the policy, although not entirely happy with all aspects of their telecommunications facilities.[39] The Committee is also conscious of the significance of communications to those living in the more isolated and remote parts of Australia, and does not take issue with the Extended Zones concept.

4.41 The challenge facing the Committee is whether - on equity grounds - to call for immediate Government intervention to address the problems of those living in the 'doughnut'. Telstra has argued that technology will solve the problem eventually, but the Committee is concerned that the population decline in many regional centres will lead to their being overlooked in the roll-out of any new technology on commercial grounds. The Committee believes that the Australian Communications Authority should conduct a comprehensive review of the issues as a matter of priority and determine whether a Government program is required in the short-term.

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37 Mr Don Pinel, Regional Managing Director, Telstra Country Wide, Queensland, Telstra, Proof Committee Hansard, 7 August 2003, p 926.

38 Mr Bill Scales, Group Managing Director, Regulatory Corporate and Human Relations, Telstra, Proof Committee Hansard, 7 August 2003, p 926.

39 See, for example, the evidence of Mrs Jano Foulkes-Taylor, a resident of Yalgoo, Western Australia, given by teleconference to the Committee on 20 May 2003, *Proof Committee Transcript*, p. 809 and her submission no. 137. Mrs Foulkes-Taylor is a member of the Telstra Country Wide Advisory Board.

Chapter 5

Regulatory and competition issues

5.1 While previous chapters have examined the two key functions of the Australian telecommunications network – to provide voice and data services – on the basis of the available technology, the state of the network, and Government programs intended to improve access, in this chapter the Committee will explore some regulatory and competition issues. Once again the prominence of Telstra's role has skewed the discussion in this chapter towards its operations, despite the fact that it is only one of several infrastructure suppliers.

Customer Service Guarantee

5.2 The Customer Service Guarantee (CSG) is intended to provide customers with an automatic remedy if their telephone service suffers from a fault which is not rectified within certain timeframes. Occasionally disruptions to telecommunications services affect a significant number of customers in a particular area. Where the cause of that disruption is beyond a carrier's control, such as a major cable being inadvertently damaged by a roads contractor, the carrier can be relieved of its obligations under the CSG in relation to the time taken to rectify faults in the supply of services. This also automatically relieves the carrier of the requirement to make compensation payments under the CSG if it is unable to restore services within the timeframe set out in the CSG. These events are generally described as mass service disruptions (MSDs).

5.3 The loss of phone service can have quite dramatic consequences for consumers, especially businesses:

> I represent 18 companies in close proximity to Albion Park Rail on the Princes Highway. On 7 February 2002, the telephone services were severely disrupted for a period of 13 days. Seventeen to 18 businesses in close proximity to our premises were severely affected, and a domestic house on the opposite side of the street were also disrupted. Trying to operate a business with a mobile phone is not the most ideal situation. This disruption resulted in the loss of revenue, our auto banking facilities such as cheque, savings and bankcard facilities, fax modem facilities and sales, and the convenience of sending and receiving orders. We were unable to offer our service and communications through our sales department, losing more than 700 calls.[1]

5.4 Several witnesses were concerned about the process of MSD declarations, including the absence of publicly available, clearly defined, criteria setting out what

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1 Mrs Brenda Lenhart, M & M Ceramics Pty Ltd, Committee Hansard, 11 October 2002, p 4.

constitutes an MSD. In the absence of such documentation, suspicions were voiced that Telstra is excessively resorting to MSDs as a means of bypassing the requirements of the CSG:

> … it is our opinion that they are using this [MSD] as a means of bypassing their CSG obligations; therefore, they are saving on compensation. It is a means of denying Tasmanians their rightful access to a reliable telecommunications service by way of putting the necessary capex into the ground.[2]

5.5 Some witnesses considered that Telstra too frequently blamed the weather for MSDs when factors within its control were responsible. Several union representatives suggested that the majority of recent MSDs could be traced to inadequate maintenance and investment:

> Our submission is that the cable network is deteriorating, particularly the older air cord cable, and this is largely due to a lack of maintenance. The situation that was referred to in the previous submission [an MSD at Albion Park] was, we are informed by our members, avoidable and should not have happened in normal circumstances.[3]

> Right now we have mass service disruption and, in the view of the union in New South Wales, the only reason for that is the lack of investment over the last few years in the Telstra network. Had that not been the case, we would not be seeing this number of faults in the network each time it rains.[4]

> There is more capital rationing happening at a time when more capital investment is required. That is the broad difficulty.[5]

> On the one hand, you do have to make allowance for extraordinary events; I think that is not unreasonable. But on the other hand, the mass service disruption mechanism can mask, as we believe it does, a more fundamental problem with the infrastructure. It should not be the case ideally that when it rains you get a whole lot of faults because your cables are in a state of disrepair.[6]

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2 Mr Graeme Sturges MP, Past State Secretary, Communications Division, Communications Electrical and Plumbing Union, Committee Hansard, 24 April 2003, p 382.

3 Mr Ian McCarthy, Secretary, New South Wales Telecommunicati0on and Services Branch, Communications Electrical and Plumbing Union, Committee Hansard, 11 October 2002, p 14.

4 Mr Shane Murphy, New south Wales Branch Organiser, Communications Division, Communications Electrical and Plumbing Union, Committee Hansard, 19 May 2003, p 749.

5 Ms Rosalind Eason, Senior National Industrial Research Officer, Communications Electrical and Plumbing Union, Committee Hansard, 26 November 2002, p 81.

6 ibid., p 70.

5.6 Other witnesses pointed to deficiencies in Telstra's management practices as contributing to the number of MSDs. These included staff cuts, increased reliance on contractors rather than full-time employees and the concentration of expertise in Melbourne:

> I am aware that between Helensborough, at the northern end of the region, and Albion Park over the last four years the technical staff have been cut by 53 per cent; I am advised from 150 to 70 technicians.
>
> …I think the rationalisation of staff and not having a central core to deal with these problems on a region by region basis exacerbates the problem when breakdowns occur.[7]
>
> With Telstra getting rid of all the staff, the maintenance has fallen over. The main cable problem is that Telstra have contracted out to a company called NDC, which is an arms-length company of Telstra, to provide the cable pressure systems that keep these main cables under pressure and the numbers they use in them are inadequate. That is where the problem is: the air flows in these main cables.[8]
>
> They centralised all the maintenance to one area is a great engineering achievement, in some ways. It took out a lot of expertise from the capital cities – Sydney and Adelaide. All the capitals except Hobart, had their own technical experts available. They were all centralised to Victoria…I reckon it was a very bad thing to do. They made a lot of savings allegedly. A lot of good people, who had all the expertise, did not want to go to Melbourne so they left the company. It did provide a great source of highly qualified technical staff for Vodafone and the other companies.[9]

5.7 It was also suggested that Telstra is concentrating its maintenance efforts on quick fix, band aid solutions at the expense of major networking structural problems. This approach shows positive levels of CSG compliance, arguably to boost the case for privatisation, but increases the potential for MSD declarations because it directs attention away from more significant, underlying problems:

> Because Telstra has become focused, for political reasons, on getting the CSG figures to a certain level – because we know that they are supposed to be a trigger for further privatisation – it has led to a rather one-sided focus on a certain form of performance, which can have an adverse effect on actual maintenance. Employees are encouraged to get the quick fix at the

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7 Ms Jennie George MP, Federal Member for Throsby, Committee Hansard, 11 October 2002, p 8.

8 Mr Steve Dodd, Union Organiser, Communications Union Branch, Communications, Electrical and Plumbing Union, Committee Hansard, 11 October 2002, p 15.

9 Mr Collin Cooper, National Vice-President, Communications Electrical and Plumbing Union, Committee Hansard, 26 November 2002, p 73.

> maintenance level in order to get those time frames right for the CSG, and that means that everything is fine with the employees' productivity and performance and the local manager's performance. But that quick fix is not addressing the basic maintenance problem, and that is what we saw in the Boulding incident.[10]

5.8 Another concern was the inadequate warning of the declaration of an MSD:

> So people were not warned at the start of it, [MSD at Albion Park] but Telstra was saying that it was a problem with wear and tear and water. It was only after some several days and weeks that they [constituents] were finally advised that it was an MSD. That is why I contend that they hid behind that to obscure some of the other issues that went to the source of the problem.[11]

Telstra response

5.9 In evidence provided to the Committee, Telstra set out its criteria for determining when a MSD has occurred and its management and compliance processes for dealing with MSDs.[12] It also advised the Committee that:

> Following the government's amendments to the telecommunications carrier licence on 15 May 2002, Telstra has developed and enhanced the criteria used to assess eligibility for CSG exemption declaration. This has included a much shorter time frame for notifying ACA, TIO and customers.[13]

5.10 Telstra pointed out that the Australian Communications Authority (ACA) has not expressed concern with the way in which the MSD notices are issued:

> Telstra has not had any feedback from the ACA that has indicated any fundamental problems with the way in which Telstra has issued MSD notices.[14]

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10 Mr Rosalind Eason, Senior National Industrial Research Officer, Communications, Electrical and Plumbing Union, Committee Hansard, 22 November 2002, p 76.

11 Ms Jennie George MP, Federal Member of Throsby, Committee Hansard, 11 October 2002, p 10.

12 Telstra, Submission 107c, pp 6-7. See also Committee Hansard, 7 August 2003, p 949 and Submission 107b, pp 8-9.

13 Mr Anthony Rix, Head, Service Advantage, Telstra, Proof Committee Hansard, 7 August 2003, p 948. See also Submission 107b, p 7.

14 Mr Anthony Rix, Head, Service Advantage, Telstra, Proof Committee Hansard, 7 August 2003, p 849.

5.11 Telstra explained that all of its repair and maintenance work, whether undertaken by Telstra staff or by contract labour, was subject to strict quality controls. As an example, it set out its minimum standards for temporary repairs as follows:

> The minimum standard for temporary repair of a phone service is to provide the customer with the ability to make and receive telephone calls. In making a temporary repair, consideration is made of any safety hazard associated with the solution and the risks of future failure of the customer's service. In the case of a customer with a disability service the temporary repair will allow them to use their existing teletype.[15]

5.12 Telstra disputed claims that contractors are paid significantly less than Telstra's permanent staff for comparable work:

> Benchmarking between Telstra service and contractors shows that there is not generally a significant difference in cost for installation and maintenance costs. Without detailing the rates, the difference is largely due to the different activities.[16]

5.13 It explained that contractors' work is monitored for quality and did not dispute union claims that only one in ten jobs, on average, is inspected:

> Telstra undertakes contract inspections in accordance with Australian Standard 1199. The Australian Standard takes an approach based on sampling completed work. The standard sets out sample sizes based on the volume and type of activity that ensures high levels of statistical validity. A one in ten sampling rate is typical.[17]

5.14 Telstra also did not dispute the union claim that staff numbers have decreased but maintained that levels of service had not been affected:

> As I advised the Committee in May, a combination of the significant upgrading of the technology used in the Telstra network, the delivery of a more robust network through better targeted programs and improved work practices has created a situation where fewer staff are now needed for maintenance purposes. We are in fact able to do more with less, with staffing levels now being reduced without service levels being jeopardised.[18]

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15 Telstra, Submission 107b, p 2.

16 ibid, p 6.

17 Telstra, Submission 107c, p 4. Further information on Telstra's contract work force is provided in Committee Hansard, 7 August 2003, pp 956-957.

18 Mr Bill Scales, Group Managing Director, Telstra Country Wide, Queensland, Proof Committee Hansard, 6 August 2003, p 830.

5.15 Telstra took exception to the claims of witnesses, including union representatives, about the degraded and vulnerable condition of the telecommunications network:

> …some witnesses have claimed that Telstra's network would collapse under the weight of heavy rain and sought to use the committee's Sydney hearing on May 10 to continue with this claim. However, it is fair to say that this claim has proven to be simply wrong. In May, despite some of the worst rains in Sydney in 40 years, the Telstra network did not collapse... I make this point simply to ask the committee to be as demanding on the claims of other witnesses as you are entitled to be on Telstra's.[19]

5.16 A Telstra witness pointed out that, in fact, MSDs are quite rare.

> … less than one per cent of all CSG services were affected by CSG exemptions in the year 2002-2003. For the financial year 2002-2003 Telstra declared 65[20] CSG exemptions. There has been an increase in the number of exemptions, due to the smaller area of declaration. This actually goes to the heart of some of the questions that have been put to Telstra, in particular; if you make a declaration, how wide is that declaration? Telstra makes that declaration as small as possible with regard to the impact on customers and the impact on its productivity.[21]

Role of the Australian Communications Authority and the Telecommunications Industry Ombudsman

5.17 Representatives of the ACA explained that the organisation is constrained in assessing the need for an MSD declaration because any such assessment is essentially based upon information provided to it by Telstra. It agreed that Telstra can declare an MSD without recourse to anybody and that those adversely affected by such a declaration can seek redress only through the Telecommunications Industry Ombudsman or the courts, including through class action.[22]

5.18 ACA Deputy Chair, Dr Bob Horton, would not venture an opinion on the acceptability of this situation, but commented:

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19 Mr Bill Scales, Group Managing Director, Telstra Country Wide, Queensland, Proof Committee Hansard, 6 August 2003, p 831.

20 This figure was later revised by the witness to 66.

21 Mr Anthony Rix, Head, Service Advantage, Telstra, Proof Committee Hansard, 7 August 2003, p 949.

22 See Committee Hansard, 27 November 2002, pp 168-171 for further details.

> I do not know if it is good enough or not. Certainly, from the strength of feedback that we are getting, there is a lot of concern about it.[23]

5.19 The Telecommunications Industry Ombudsman, Mr John Pinnock, disputed the ACA interpretation of its role with respect to an MSD:

> It is not true, in my view, though, to say that the Authority, if it had doubts about the applicability of an MSD in any given circumstance – in other words, its veracity –would not be able to look at the issue. I just do not agree with that.
>
> …if the Authority is satisfied with that methodology [used in declaring an MSD] then even if I have some qualms from time to time, again the guarantee is its regulation. But if the authority is saying to the committee, 'We do not have any powers to inquire into this,' I just do not agree with that. It may not wish to or feel that there are grounds to do so, but the authority has very extensive powers under its Act.[24]

5.20 The Committee's attention was drawn to a review the ACA was conducting into MSD declarations:

> …the ACA is currently conducting a review of information supplied by Telstra in the event of a MSD declaration. The review will consider the format and timing of information provided by Telstra to the ACA, the TIO and Telstra's customers. It will also consider the creation of appropriate processes to ensure that MSD notices are only issued for areas that are affected by the cause of the outage or by the need to move staff or equipment from another associated area to attend the outage.[25]

5.21 Mr Pinnock explained that he is advised only of the MSD notifications that are problematic.[26] While he had no particular concerns with the existing MSD declaration process he considered there was scope for greater scrutiny in oversighting it, especially on the part of the ACA, and that existing protocols essentially amounted to self regulation on the part of Telstra:

> It is true that the authority has said, essentially, that this is a notification process, but it is more than a notification process because you are essentially allowing the carrier to self-declare an exemption under the guarantee. I

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23 Dr Bob Horton, Deputy Chairman, Australian Communications Authority, Committee Hansard, 27 November 2002, p 170.

24 Mr John Pinnock. Ombudsman, Telecommunications Industry Ombudsman Scheme, Committee Hansard, 14 May 2003, p 691.

25 Mr Allan Major, Australian Communications Authority. Letter to Ms Jennie George MP. Included as an attachment to Submission 26.

26 Mr John Pinnock, Ombudsman, Telecommunications Industry Ombudsman Scheme, Committee Hansard, 28 March, 2003, p 267.

> have always had a conceptual difficulty with that. I have always taken the view that there should be much greater rigour in looking at the basis on which you calculate the methodology… but that is not a matter I have control over. All I am left to do is look at individual complaints about whether an MSD properly applies to that customer service.[27]

5.22 Mr Pinnock discussed the difficulty of defining extreme weather conditions in Australia as the basis for declaration of an MSD[28] but concluded that in fact Telstra's assessment of productivity is now the sole basis for declaration of an MSD. He considered this was an inherently problematic approach:

> My concern. I guess, is that the methodology Telstra has used to underpin the MSD regime is wholly and solely based on productivity aspects. That means that the regime of notices can vary from time to time not only because of things such as staff leave commitments and these sorts of things but also because of decisions Telstra takes in a commercial sense as to what staff are going to be available as a whole….I am not saying that if it [Telstra] further reduces staff, the length of MSDs we will see in future will blow out. I do not think it is as unsophisticated a relationship as that. But I have never been entirely satisfied that this is the proper basis for assessing an MSD notice.[29]

Review of the Customer Service Guarantee

5.23 In June 2004 the Government released its review of the USO and the CSG. Although the review mentioned that the issue of exemptions from the CSG had been raised in submissions it did not explore the issue in any detail[30]. The review concluded that:

> No further major changes to the CSG Standard are required at this time but it should continue to be monitored.[31]

Summary

5.24 The Committee acknowledges that the telecommunications carriers should not be liable for compensation payments for matters beyond their control and that some

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27 Mr John Pinnock, Ombudsman, Telecommunications Industry Ombudsman Scheme, Committee Hansard, 28 March 2003, p 269.

28 See Committee Hansard, 28 March 2003, pp 699-700.

29 Mr John Pinnock, Ombudsman, Telecommunications Industry Ombudsman Scheme, Committee Hansard, 14 May 2003, p 698.

30 Department of Communications, Information Technology and the Arts, *Review of the Operation of the Universal Service Obligation and the Customer Service Guarantee*, p 209.

31 ibid., p 221.

form of exemption from the provisions of the CSG is appropriate. The issue is whether the current MSD notification system is appropriate, or whether it simply represents a loophole in the CSG system that enables carriers to evade their responsibilities to their customers to provide adequate services.

5.25 This issue is one where the union and Telstra management have engaged in an argument of the 'glass half-full' nature. While the union has highlighted what it considers to be unacceptable behaviour by Telstra in relation to MSD declarations, Telstra has countered with its own, seemingly equally valid, interpretations. It will be a matter for the ACA review to resolve fact from fiction and to ensure that an appropriate system is developed.

5.26 Given the inconvenience and financial consequences for customers subject to MSDs, the Committee is particularly concerned at the apparent lack of independence in the MSD declaration process. It is this lack of independent oversight of the declaration process that gives the appearance of a loophole that is wide open for carrier exploitation.

Role and powers of the Australian Communications Authority

5.27 The Australian Communications Authority (ACA) has responsibility for a range of technical and service standards issues. It licenses telecommunications carriers, reports to the Minister on carrier performance, administers the USO, CSG and NRF regimes. However, its ability to effectively regulate the telecommunications sector has been brought into doubt during this inquiry.

5.28 The ACA has been established as very much a 'hands off' regulator, relying heavily on self-regulation and information monitoring rather than direct intervention. As such, it has not been particularly pro-active in ensuring that the Australian telecommunications network is capable of delivering adequate standards and levels of service to all Australians. The ACA monitors the compliance of carriers with the customer service guarantee and Telstra's performance under the Network Reliability Framework. However, the figures it produces through these processes are published well after the period to which they relate and measure the past performance of the network. They do not provide any information or guidance on the current state of the network, or on whether the network will continue to be able to meet acceptable standards of performance. Since the Besley report, the ACA has been required to report more regularly (i.e. monthly) under the Network Reliability Framework. This reporting has identified particularly poorly performing exchanges, with the ACA recently requiring Telstra to undertake remedial work in 54 rural exchanges.[32] This has marked a change in emphasis in the role of the ACA, which the Committee welcomes and argues needs to be extended to improve network reliability.

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32 Australian Communications Authority, *ACA identifies rural exchanges needing improvement*, Media Release No 30 – 15 August 2003.

5.29 A related issue is the limited range of monitoring undertaken by the ACA. The ACA's regular Performance Monitoring Bulletins are restricted in their focus to the provision of voice services. They do not examine the ability of the network to support adequate data services.

5.30 An issue of considerable concern is that the ACA's monitoring does not quickly show the true state of the Telstra network. In Chapter 2 of this report the Committee examined the available evidence on the level of faults in the Telstra network. The Committee received extensive evidence from the CEPU about the deterioration of the Telstra network as a result of falling capital expenditure and stop-gap repairs. As noted in that chapter the concerns of the CEPU were borne out by evidence from Telstra's own internal documents. However, at the same time that Telstra was recording sharply rising and record fault levels in its internal document, the ACA issued a Media Release saying that 'an analysis of faults occurring on Telstra's network between August and October 2003 showed an improvement in performance over the last quarter'.[33] The ACA's most recent Performance Monitoring Bulletin, published at the end of March 2004, does identify 'a progressive decline in the monthly percentage of Telstra fault-free services as measured by the Network Reliability Framework' but the ACA then goes on to state that 'declines in Telstra performance in the December and March quarters are typical of the seasonal patterns in the CSG figures'.[34]

5.31 On 1 April 2004 the ACA announced a review of the Network Reliability Framework and called for public comment on the effectiveness of its operation.[35]

5.32 Another weakness in the ACA's regulatory framework relates to the declaration of mass service disruptions by Telstra. As discussed earlier in this chapter the ACA has no independent role in gathering its own evidence about whether Telstra is justified in declaring a MSD. Nor has the ACA used these MSDs as triggers to investigate whether MSDs are indicative of underlying problems with the Telstra network.

5.33 The Committee is deeply concerned that the current light touch regulatory regime is failing to ensure that the Australian telecommunications network is being adequately maintained.

5.34 Another recurring issue in Telecommunications is the location of telecommunications infrastructure. At present neither the ACA, nor any other body, has comprehensive and publicly available maps setting out the location of existing and planned telecommunications infrastructure. This lack of information make it very

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33 Australian Communications Authority, Media Release No. 64, 18 December 2003.

34 Australian Communications Authority, Media Release, 31 March 2004.

35 Australian Communications Authority, Media Release No 23, 1 April 2004.

difficult for state governments, local councils and regional organisations to understand what infrastructure is already available in a particular area and how that existing infrastructure can be used to improve access to services and increase competition. As most of the infrastructure is controlled by Telstra it enjoys a considerable competitive advantage through being the only party with a sound knowledge of the existing infrastructure.

5.35 A fundamental requirement in planning future telecommunications infrastructure is a knowledge of what infrastructure currently exists and where it is located. This is an issue which the regulatory regime should address.

Competition

5.36 For most of its history the Australian telecommunications industry has been a government monopoly, run by a single company and regulated by Commonwealth legislation. More recently, as outlined in Chapter 1, the industry has been opened up to competition.

5.37 While these changes have undermined Telstra's monopoly position in the telecommunications industry, it remains the dominant player, especially in the provision of infrastructure:

> While there is a froth of competitive behaviour in the market place, the bulk of the profit in the industry is earned by one company. Telstra, the former monopoly incumbent is still the dominant player in many telecommunications markets.[36]
>
> After 10 years competition, Telstra earns 75% of the industry revenue, spends 67% of industry capex [capital expenditure], earns 95% of the industry profit, and has received $625 million of the $650 million spent by government on infrastructure projects. Over that time the industry has doubled in revenue to about $30 billion.[37]
>
> Without effective infrastructure competition, services delivered are reliant on using existing facilities and technologies from incumbent infrastructure. The range of services available is limited to what the dominant provider chooses to supply. As the incumbent has control over access it has considerable control over prices.[38]

5.38 While Telstra representatives did not dispute the dominance of the company's position, they considered that it has been overstated:

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36 Australian Consumers' Association, Submission 71, p 3.

37 Australian Telecommunications Users Group Ltd (ATUG), Submission 89, p 11.

38 Optus, Submission 91, p 9.

> The first myth is that Telstra is the Australian telecommunications network. Plainly and clearly, it is not. We believe Telstra's network represents approximately 70 per cent of telecommunications infrastructure and is now subject to vigorous facilities based competition in most sectors.[39]

5.39 Mr Lawrence Paratz of Telstra Country Wide informed the Committee that there are 27 owners and carriers with physical infrastructure in Australia, 600 ISPs and more than 100 licensed carriers and mobile operators.[40]

5.40 A number of witnesses suggested that Telstra uses its dominant position to engage in anti-competitive conduct, such as obstructing new entrants to the market and maintaining prices to consumers at unnecessarily high levels:

> New entrants face considerable disadvantage and without strong competition regulation can be driven from the market. The existing telecommunications specific competition regulations have been beneficial in opening up Telstra's monopoly bottleneck facilities to facilitate new entry. However, Telstra continues to have significant control over facilities and key markets. More needs to be done to open up the playing field to promote real genuine competition.[41]

> Even in the face of clear indications … that policy makers are committed to increasing and strengthening competition, Telstra is seemingly intent on extending the market power it gains from its vertical integration. For example, Telstra has made it very clear to the market that, although it will allow other pay TV operators to use the Foxtel cable, it will not allow telecommunications competitors to offer Internet or high-speed data services via that cable infrastructure. In effect, it plans to lock up that communications gateway to the consumer and further suffocate the opportunity for competition in the market.[42]

> …it [is] the view of the ACA [Australian Consumers' Association] that the dominance of the market by Telstra, particularly in terms of revenue and profit, based on ownership of the vital core network, means that economically persuasive offers to consumers are hard to find.[43]

5.41 It was suggested that Telstra's anti-competitive practices have had a particularly deleterious effect on consumers in rural and regional areas:

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39 Mr Lawrence Paratz, Regional Managing Director, Southern Region, Telstra Country Wide, Telstra, Committee Hansard, 6 December 2002, p 286.

40 ibid.

41 Optus, Submission 91, pp 11-12.

42 Comindico Pty Ltd, Committee Hansard, 27 November 2002, p 142.

43 Australian Consumers' Association, Submission 71, p 4.

> Outside those primary telecommunications markets in Australia, [Sydney and Melbourne] you do not have competitive infrastructure providers. The extreme case is the one with respect to the whole state of Tasmania where in fact there is only one provider of that underlying infrastructure. As a result, that has held back the deployment of separate connectivity and application services in those markets. That is, I think, the basic problem in most markets outside Sydney and Melbourne.[44]
>
> Telstra's pricing in the intercapital markets, where there is most competition, has reduced dramatically over the past few years and yet in regional areas, where they do not face the same level of competition, pricing is much higher.[45]

5.42 It is claimed that the existence of such practices shows that moves since 1991 to open up the Australian telecommunications industry to competition have failed:

> It is undeniable that competition in telecommunications has failed. Telstra controls most of the infrastructure and is a major shareholder in Foxtel which is seeking to merge with Optus at the services level. Because of its dominant market position, based on its ownership of infrastructure, Telstra is travelling quite well relative to telcos elsewhere in the world. Despite a very complex regulatory regime, Telstra's role as both network and service provider is at the heart of the problem. Telstra is totally focused on short-term, bottom-line performance in order to pay dividends to its shareholders (both public and private). Meeting the telecommunications needs of the public now and in the future is not its main focus.[46]

5.43 The Australian Telecommunications Users Group summarised some of these failures as follows:

> After five years of open competition in telecommunications, we now know:
>
> A privatised incumbent operating in a competitive industry will always focus on maximising shareholder returns – forget promoting competition or end user interests.
>
> The "light touch/industry self-regulation" approach has not been effective in protecting end users – and must be reversed.
>
> …the "one size fits all focus" on infrastructure (facilities) competition rather than services competition has resulted in wasted capital and a negative reaction from the capital markets to further innovation.

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44 Dr Terence Cutler, Comindico Pty Ltd, Committee Hansard, 27 November 2002, p 145.

45 Mr David Green, NTL Telecommunications Pty Ltd, Committee Hansard, 28 November 2002, p 253.

46 Ms Elizabeth Elenius, Submission 84, p 13.

> The size and spread of the market have created difficulty in diffusing competition beyond the CBDs. Progress has only been achieved by direct Government funding.[47]

5.44 Lack of information about existing infrastructure is argued to be a barrier to the development of competing infrastructure. Without ready access to information about what infrastructure exists, and where it is located, Telstra's potential competitors are at a significant disadvantage in planning the deployment of new infrastructure. During its inquiry the Committee found that little information about the location of existing infrastructure was available, although that situation improved somewhat as the inquiry proceeded. This issue will be discussed in more detail in the Committee's report on broadband competition.

5.45 Some commentators have suggested that Australia's population is too small and too scattered and Australia's terrain too difficult to support more than one successful telecommunications carrier, at least as regards the provision of infrastructure. This is the case for the country as a whole but is a particularly pertinent observation with respect to rural areas:

> The reality of telecommunications infrastructure is that the access network (between the consumer and the local exchange) almost certainly constitutes a natural monopoly – particularly in outer metropolitan and rural areas.[48]

5.46 A number of submissions went on to suggest that, since telecommunications infrastructure is a natural monopoly, it can most efficiently be provided by a single carrier under public control:

> When considering the provision of services, such as telecommunications, in Australia, I believe that it is necessary to remember that we are in a unique situation. We have a very large landmass (comparatively, on a nation-wide basis), which is very sparsely populated over much of its area. Therefore, economic motivators such as profit will not induce private companies to invest in the interior of Australia, thus denying approximately 30% of Australians adequate services if they are not provided by the state.[49]

> It may be that in a country with a large landmass and relatively small and concentrated urban population, there is room for only one network, especially at the long haul and inter-exchange level, and especially to the residential consumer. If so, then that network should be considered a public infrastructure asset.[50]

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47 Australian Telecommunications Users Group Ltd, Submission 89, p 7.

48 Mr John Burke, RMIT University, Submission 69, p 5.

49 Ms Roslyn Joseph, Submission 32, pp 2-3.

50 Ms Elizabeth Elenius, Submission 84, p 3.

5.47 A further area of concern is Telstra's involvement in Foxtel. The Communications Expert Group submitted that:

> … the power utility broadband networks are under serious threat if the Telstra/Foxtel/Optus monopoly can restrict or control the provision of content to other cable distribution services. While the power utilities can reduce installation costs, they will not be financially viable unless they can offer cable TV, broadband and telephone services to compete with Telstra's bundled customer services.[51]

5.48 Some witnesses suggested that the extent of Telstra's anti-competitive conduct is moderated by current levels of government regulation and oversight. With the full privatisation of Telstra this oversight will be greatly reduced and existing anti-competitive conduct can be expected to increase:

> …Little competition exists outside the mobile and terrestrial markets and with the sale of the remaining portion of Telstra on the government agenda, any chance of preventing the core infrastructure falling into a monopolies control, is diminishing fast.
>
> As Australians, we cannot let the full privatisation of Telstra [to] go ahead, without seriously considering the monopoly it will create in the wholesale market.[52]

5.49 Various approaches were suggested to the Committee to avoid the emergence of a privatised, monopolistic Telstra exempt from any form of control. One suggestion was for the Government to buy back that portion of Telstra already in private ownership so that it can maintain its regulatory role and ensure that telecommunications developments meet national objectives:

> The Government has to realise that if it sells Telstra, it will still have to provide continual support to Telstra countrywide and it has to run in a business approach (as it already does).
>
> In this situation Telstra CountryWide is not a sale item but a main Government infrastructure provider. Likewise, Telstra Residential is not a sale item – as it makes no money. That leaves Telstra Business/Government – and its role is also therefore to support Telstra CountryWide with funds and expertise, such that the Government does not have to fund Telstra CountryWide!
>
> It makes common economic sense for the Government to buy back at a reduced price the part of Telstra that was sold – and leave it an arms length Government business![53]

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51 Communications Expert Group Pty Ltd and Community Tele-Services Australia Inc, Submission 86.

52 Mr Robert Ardill & Mr Grant Roper, Submission 8, p 4.

5.50 Another suggestion was that it should not proceed with the sale of the balance of Telstra. This, it was argued, would have a number of benefits including continued government oversight:

> We oppose the sale of the 50.1 per cent balance of Telstra for a number of reasons. Firstly, there is the issue of ownership and the sale of public infrastructure to private interests, with a potential lack of control by the Australian government in ensuring service delivery, competitive pricing and high standards.[54]

5.51 A further suggestion was that the Government should delay the sale of the remaining portion of Telstra until steps can be taken to ensure a more competitive environment is in place. During this transition period the Government could intensify its current efforts to enhance competition through support to new players. Some successful models were brought to the Committee's attention:

> …the government needs to think very carefully about competition consequences of its policies and decisions as well as positive mechanisms that promote new players and new technologies. We are seeing significant steps in the right direction. I think the best example of this is the National Communications Fund, which came out of the Besley inquiry. It provided $50 million for health and education communication services. It encouraged partnerships between carriers, state and territory governments and industry groups. It promoted large projects and operated in a way that was genuinely contestable.[55]

> That [the Coorong project, funded under the Networking the Nation program] is an instance where there has been a marriage between local government and private enterprise. They have successfully bypassed the Telstra network and have obtained significantly cheaper telephone calls within the district, the state and Australia. Calls cost a fraction of the normal rate. So that is an example of where federal government funding acted as a trigger. It got them over the hurdle, and they were able to establish the network. That is probably the most successful one that I know of, and it has been going for a number of years.[56]

5.52 It was suggested that other models have been less successful and would need to be modified before wider implementation:

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53 Mr Malcolm Moore, Submission 62, p 9.

54 Ms Vicki Brooke, Committee Hansard, 20 May 2003, p 783.

55 Mr David McCulloch, SingTel Optus, Committee Hansard, 6 December 2002, p 258.

56 Mr Douglas Kelso, National Office for the Information Economy, Committee Hansard, 27 November 2002, p 124.

> …our view is that, if we are talking about national availability, we need to have a national program, or a policy framework at least, designed to do more than just encourage regional experiments – some of which may be successful for a time, some of which already have failed and some of which will probably be casualties of this current downturn. The problem with a lot of the funding so far, in our view, from Networking the Nation and such programs is that it has not been very well coordinated. It has not been part of a larger strategy.[57]

> In Optus' view, considerable opportunities to support new technologies, and new entrants into regional Australia have been wasted. In bolstering the incumbents' already dominant position, ongoing prospects to promote competition in regional Australia has been considerably undermined. But worse, some funding has actually promoted anti-competitive behaviour and destroyed competition in emerging markets.[58]

5.53 A number of participants pointed to the need to minimise anti-competitive behaviour in a fully privatised Telstra through enhancements to the regulatory regime, which many considered is not particularly effective in its present form:

> There is a clear need for tough regulation. The current powers of the ACCC and the TIO are far from adequate to control a fully privatised Telstra.[59]

> I believe that it is necessary to regulate to ensure that rural and regional Australians receive adequate telecommunications services now and in the future. This is particularly true if the telecommunications service providers are privately owned, as opposed to publicly owned, where there is (or should be) public accountability.[60]

> Competition policy and its application are key to achieving progress. Users want strong competition – to deliver choice of world class services at world class prices. ATUG feels focus is needed now on information based regulatory supervision in the face of decreasing opportunity for infrastructure and investment based competition.[61]

5.54 In recognition of the constraints on telecommunications operators in Australia and of the tendency to a natural monopoly in infrastructure, several witnesses suggested that one solution might be to retain the infrastructure in one company in public ownership while privatising the retail side of its operations:

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57 Ms Rosalind Eason, Communications, Electrical and Plumbing Union, Committee Hansard, 26 November 2002, p 92.

58 Optus, Submission 91, p 13.

59 Mr Robert Ardill and Mr Grant Roper, Submission 8, p 5.

60 Ms Roslyn Joseph, Submission 32, p 2.

61 Australian Telecommunications Users Group, Submission 89, p 13.

> In the opinion of the ACA [Australian Consumers' Association], what is needed is to split Telstra into separately owned portions, one of which has custody of the critical core network. This network is a natural monopoly, and should remain in government hands for the foreseeable future. However, we would not endorse a policy that might purport to stop the development of competitors to this network. Were competitive pressures to emerge to confront the government owned network, in our view these should be encouraged and the consequences played out….When the retail components of Telstra compete on equal terms for access to the core network with other companies, we might see real, sustainable competition deliver telecommunications benefits to Australian consumers. In our view, fully and finally privatising the vertically integrated and horizontally sprawling behemoth that is Telstra unreformed would not assist build genuine competitive pressures in the market, but would appreciably diminish the capacity for Government to bring the corporation to heel.[62]

> A combination of regulation and careful break-up of Telstra can offer Australia what it needs. Breaking Telstra down the middle into wholesale and retail components, where the retail arm of Telstra would become fully privatised and the wholesale arm remain fully government controlled. In effect, the wholesale arm would take on the form of a conventional public utility, where wholesale prices would be published publicly, allowing wholesale customers to compete on even terms.[63]

> We propose the formation of a cable network authority to design, manage and maintain Australia's line, terminal and cable infrastructure. Part of this infrastructure would have to be purchased from the privatised portion of Telstra. It would leave Telstra with its subscriber base, exchanges and ancillary services. The cable network authority concept means that ownership of the Australian cable network would be retained in public hands and subject to government control and regulation. It would help to solve the problem of parallel networks and the ownership issue. It would also foster true competition, free of the burden of cable ownership, by giving equitable access to all telcos, helping them to ensure quality of service delivery and competitive pricing for all Australians.[64]

> We are evolving a model very much like the roads network where on our roads we have all sorts of taxi companies, courier companies and transport companies competing and using whatever technology they want in order to compete. The only thing that makes it essential to compete is that they get

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62 Australian Consumers' Association, Submission 71, p 40.

63 Mr Robert Ardill and Mr Grant Roper, Submission 8, p 5.

64 Ms Vicki Brooke, Committee Hansard, 20 May 2003, p 783.

> free and fair access to the roads. That is the sort of model we believe perhaps needs examination in the context of telecommunications.[65]

5.55 The case for structural separation was also supported by ACIL Tasman, with the support of the Competitive Carriers Coalition, in its submission to this Committee's inquiry into broadband competition. ACIL Tasman stated that the telecommunications sector is being curtailed by insufficient competition and that while Government reforms aimed at improving the competition regime were welcome, they are limited in scope. The submission referred to research in the US which suggests that agreements on access tend to be reached under vertical separation than vertical integration, that the incumbent was systematically more exploitative in negotiating under vertical integration; and that entry was systematically lower in regions served by the integrated incumbent.[66]

5.56 ACIL Tasman also provided the Committee with a detailed study of the impact of structural change on shareholder value. This study found that economic theory does not predict an adverse effect for shareholders. The study went on to examine three cases of structural separation which showed that structural separation can enhance shareholder value.[67]

5.57 Support for the possible benefits of structural change also comes from the OECD. In 2003 it issued a recommendation stating that:

> When faced with a situation in which a regulated firm is or may in the future be operating simultaneously in a non-competitive activity and a potentially competitive complementary activity, Member countries should carefully balance the benefits and costs of structural measures against the benefits and costs of behavioural measures.
>
> The benefits and costs to be balanced include the effects on competition, effects on the quality and cost of regulation, the transition costs of structural modifications and the economic and public benefits of vertical integration, based on the economic characteristics of the industry in the country under review.
>
> The benefits and costs to be balanced should be those recognised by the relevant agency(ies) including the competition authority, based on principles defined by the Member country. This balancing should occur especially in the context of privatisation, liberalisation or regulatory reform.[68]

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65 Mr John Murphy, RMIT University, Committee Hansard, 26 November 2002, p 97.

66 ACIL Tasman, Submission 7, Inquiry into Competition in Broadband Services.

67 ACIL Tasman, Submission 7a, Inquiry into Competition in Broadband Services.

68 Organisation for Economic Co-operation and Development, *Recommendation of the Council Concerning Structural Separation in Regulated Industries*, 6 June 2003.

5.58 While many witnesses favoured the structural separation of Telstra into its wholesale and retail components, others noted that it was important to retain competition in wholesale as well as retail operations. Some pointed to the success of existing competition in infrastructure, with Reefnet in Queensland a prime example.[69] Others suggested that the price of reliance on a single carrier was greatly increased regulation:

> So one of the consequences of going back to a single carrier is that you will need to introduce a whole lot more regulation to make sure you get the best possible outlook.
>
> Fundamentally, I do not believe in single carrier solutions – but that again is reinforced by the fact that I think we do have the demand coming downstream that will support more than one carrier.
>
> Another point with respect to a purely wholesale carrier is that you do not get vertical integration unless that wholesale carrier has a retail arm, and then there is the issue of how you regulate its relationship with its retail arm as opposed to its relationship with other retail competitors. So, again, you need regulatory apparatus to control that…I do not see that there is a compelling case to go to a single carrier.[70]

5.59 Comindico suggested that the most effective means of enhancing the regulatory regime in telecommunications would be to extend the divestiture powers of the ACCC to include telecommunications, in situations of gross anticompetitive conduct:

> We believe that only a fresh approach to the regulatory regime offers a hope of shifting Telstra's mindset and reinvigorating the market. We believe that can be achieved through the addition to the Trade Practices Act of the new 'last resort' remedy we speak about in our submission – the ability of the ACCC to apply to the Federal Court to order a company to divest itself of certain assets if it believes that a structural response is the only viable response to persistent anticompetitive behaviour.[71]

5.60 In March 2002 the then Minister for Communications, Information Technology and the Arts, the Hon Richard Alston, asked the Australian Competition and Consumer Commission to provide him with advice on the 'extent to which emerging market structures are likely to affect competition across the communications sector'. In response the ACCC provided the Minister with its report on *Emerging Market*

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69 For details see The Hon Paul Lucas, Minister for Innovation and Information Economy, Queensland Government, Committee Hansard, 30 April 2003, p 534.

70 Mr Christopher Dalton, Committee Hansard, 19 May 2003, pp 720-721.

71 Mr David Forman, Comindico Pty Ltd, Committee Hansard, 27 November 2002, p 141.

Structures in the Communications Sector in June 2003.[72] That report examined competition in telecommunications and found that:

> The Commission's analysis indicates that the progress of competition in telecommunications markets is slowing. To date, the type of benefits that have arisen from the introduction of competition in telecommunications markets have largely flowed from competition at the retail level of the market as opposed to competition between telecommunications infrastructure providers (the wholesale level of the market).
>
> The incumbent, Telstra, remains a dominant firm in telecommunications. It is one of the most integrated communications companies in the world, continuing to be the major wholesale and retail supplier of telecommunications services, including:
>
> - local, national, long-distance, international and mobile telephony
> - dial-up and broadband Internet
> - data
> - printed and on-line directories
> - pay TV (through its 50 per cent ownership interest in Foxtel).
>
> Importantly, Telstra owns two of the three major local access networks outside the CBDs of major cities. In addition to owning the copper (PSTN) network that connects virtually every household in Australia, Telstra owns the largest cable (HFC) network, which passes 2.5 million homes. The second largest carrier in Australia, Optus, owns the other HFC network. This network passes approximately 2.2 million homes.
>
> The extent of Telstra's dominance of the sector is demonstrated by the fact it receives almost 60 per cent of total industry revenue, which is almost four times the revenue that its closest rival, Optus, receives. It is reported to receive over 90 per cent of total industry profits.[73]

5.61 The ACCC findings are broadly consistent with the evidence received by the Committee during its inquiry. The ACCC examined the possibility of enhancing competition by requiring Telstra to divest its HFC network:

> For so long as Telstra owns or has an interest in a copper network and an HFC network, Telstra will be concerned about maximising the combined

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72 Australian Competition and Consumer Commission, *Emerging Market Structures in the Communications Sector*, June 2003.

73 Australian Competition and Consumer Commission, *Emerging Market Structures in the Communications Sector*, June 2003, p xv.

> revenues of both networks, and will therefore be hesitant to introduce new services or pricing on one network which cannibalises its revenues on the other.
>
> Divestiture of the HFC network by Telstra would address this problem by introducing a new infrastructure competitor into the market against Optus and Telstra, establishing conditions for increased rivalry and innovation in the supply of a full range of telecommunications services. This competitor would have the potential to supply voice, broadband Internet and pay TV services directly to 2.5 million households passed by the HFC.
>
> Increased competition would also provide better incentives for Telstra to invest actively in its copper network to provide for the delivery of a range of advanced broadband services. Overseas experience and independent analysis (including by the OECD) strongly suggest that the enhanced competition between independent networks should improve broadband price and service offerings and thereby increase the take-up of broadband services.[74]

5.62 The ACCC recommended that the Government introduce legislation requiring Telstra to divest the HFC network in full and divest its 50% shareholding in Foxtel unless it can be shown that the costs of such divestiture outweigh the benefits.[75]

Summary

5.63 Evidence to the Committee suggests that there is widespread unease at Telstra's continuing dominance of the Australian telecommunications network and the limited extent of competition in the provision of telecommunications infrastructure. While the reasons for this might be complex, as might be demonstrated by the lack of success of several major telecommunications infrastructure projects, the full privatisation of Telstra was nonetheless seen as potentially detrimental because it would be likely to give Telstra greater freedom to exploit its dominance of the Australian telecommunications network. The Committee notes that, through the Networking the Nation grants program, the Government has enabled some positive outcomes in rural and remote Australia, but only on a relatively small, localised basis. This is no substitute for a buoyant competitive marketplace where choice of delivery platforms will better meet consumer needs at competitive prices.

5.64 The evidence presented to the Committee strongly suggests that full privatisation of Telstra should not proceed until a more competitive market for telecommunication services is established. Given statements by Telstra CEO, Dr Ziggy Switkowski, at the Telstra AGM in August 2003 that he was unhappy with the company's slide to 65 per cent market share from its former 100 per cent monopoly, the Committee is

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74 Australian Competition and Consumer Commission, *Emerging Market Structures in the Communications Sector*, June 2003, p xvi.

75 ibid., p xxi.

concerned that Telstra may, in fact, engage in practices that will lessen what little competition already exists.

The role and powers of the Australian Competition and Consumer Commission

5.65 The 1997 reforms inserted into the Trade Practices Act 1974 specific provisions to deal with anti-competitive conduct in relation to telecommunications and to establish an access regime to give competitors access to key infrastructure and services. Responsibility for administering these competition provisions was vested with the Australian Competition and Consumer Commission (ACCC), Australia's national competition regulator. A brief outline of the ACCCs role is contained in Appendix 5.

5.66 The ACCC's recommendation that Telstra be required to divest its interests in its HFC network and Foxtel raises the issue of the adequacy of the ACCCs powers and its ability to foster competition in an industry which is already dominated by a single provider. The Senate Economics References Committee recently examined some of these issues and considered the issue of divestiture powers.[76] That report found that:

> Australian trade practices law currently lacks the access to divestiture powers enjoyed by overseas jurisdictions; as a result, our competition authorities are limited in their ability to use divestiture either as a threat or as a remedy.[77]

5.67 That Committee found that the existing divestiture power in section 81 of the *Trade Practices Act 1974* should be expanded so that divestiture becomes a remedy for other breaches of the Act.[78]

5.68 The Committee is currently examining competition in broadband services in a concurrent inquiry. It will discuss the issue of the ACCC's powers as they relate to competition in the provision of particular services in its report on that inquiry.

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76 Senate Economics References Committee, *The effectiveness of the Trade Practices Act 1974 in protecting small business*, March 2004.

77 ibid., p 65.

78 ibid., Recommendation 13, p 66.

Chapter 6

The Future

Technical developments and convergence

6.1 Telecommunications is an area characterised by rapid technical development and convergence. During the short period that has elapsed since the Committee's final hearing and the preparation of its report there have been several developments which will significantly change the telecommunications environment in Australia. In particular:

- Telstra has announced that new testing showed that transmission limits for ADSL can be increased. Telstra estimated that this will extend ADSL availability to an additional 400,000 telephone services by the end of March 2004.

- Telstra announced that it will upgrade its CDMA mobile network to allow access to data services, including the Internet, at speeds of up to 144 kbps.

- Telstra signed an agreement which will allow it to develop a nationwide broadband service using two way satellite technology through a Thai owned ipstar satellite. Telstra claims that the new service will be cheaper than its current ADSL network.

- Foxtel will upgrade its pay TV service to digital in the first half of 2004 allowing it to offer a greatly expanded range of services.

6.2 The pace of development in telecommunications in the current regulatory environment raises issues about the availability and accessibility of new services. Earlier chapters of this report outline the concerns of people in rural and regional areas that they were being left behind the standard of service enjoyed by urban residents. Similar concerns were expressed by organisations representing people with disabilities. For many people in remote, rural and regional Australia the improvements in ADSL, CDMA and the Foxtel cable service outlined above are meaningless because they do not have access to these services anyway.

6.3 There are two avenues through which these concerns could be addressed. By retaining control of the Telstra network, or by taking a leadership role in the development of infrastructure, the Government could ensure that new services were made available to all Australians on an equitable basis. An alternative approach would be to recognise the importance on new technology in the regulatory regime by fully recognising the importance of data services. Unfortunately neither of these approaches is being pursued by the Government.

6.4 The proposed full privatisation of Telstra will remove it from Government control and expose it to even more pressure from the financial markets to put profits

ahead of services to its customers. In this environment there will be strong pressure on Telstra not to invest capital in providing services in remote, rural and regional areas where there will be a low return on investment.

6.5 Similarly the current regulatory regime fails to ensure that new services will reach all Australians. While it ensures that all Australians have reasonable access to voice services through the USO, it does little to ensure that people in remote, rural and regional areas have reasonable access to data services such as the Internet. It is not surprising that people in these areas are apprehensive about whether they will again be left behind as other new technologies and services become available.

Investment in the network

6.6 A key question relating to the future of the Australian telecommunications network is whether the current and projected levels of capital expenditure (capex) will be sufficient to maintain adequate levels of service. Throughout the Committee's inquiry concerns were raised about Telstra's falling levels of capital expenditure.

> What we are aware of however, is the fact that some two years ago, on a national scale, Telstra's CAPEX budget was some $5 Billion. In the current 2002/2003 Financial year, the national CAPEX budget is some $3.5 Billion and the CEO is on the public record as suggesting CAPEX in 2003/2004 to fall "below $3 Billion." (See Attachment 1)[1]

6.7 In response to a request from the Committee Telstra provided the table below which outlines its capital expenditure from 1998 to 2004. The table shows a decline in capex from $3,754 million in 1998 to an estimated $2,900 million in 2004. This represents a fall from 21.7% of revenue in 1998 to 15.5% in 2003.

Telstra Capital Expenditure[2]

				Year Ended 30 June			
	2004	2003	2002	2001	2000	1999	1998
		(in $A millions)					
Switching		376	661	735	647	626	756
Transmission		378	416	429	693	602	584
Customer access		959	929	1,004	1,315	898	778
Mobile telecommunications networks		449	255	390	628	616	340
International telecommunications infrastructure		193	233	172	125	138	143
Capitalised software		555	559	737	599	502	237
Other		454	553	677	722	926	986
Operating capital expenditure		3,364	3,606	4,144	4,729	4,308	3,824
Less Non Domestic Capex spend		187	172	93	70	70	70
Core Domestic Operating Capex (incl Cap Interest)	**Around 2,900**	**3,177**	**3,434**	**4,051**	**4,659**	**4,238**	**3,754**

1 CEPU Tasmanian Communications Branches, Submission 133.

2 Telstra, Submission 107d.

6.8 The Australian Telecommunications Users Group submitted that this decline in capex was the result of pressure from the financial markets since the partial privatisation of Telstra:

> The interest of the financial sector in the industry since 1997, when T1 was issued, has had significant influence on industry directions. It has also created unforeseen tensions between the interests of the shareholders and the interests of the end users. In 2001/02 the capital market is saying: reduce capex, improve earnings and cut costs. The impacts on users will be higher prices, reduced levels of service and possibly delayed innovation.[3]

6.9 Telstra advised the Committee that the falls in capex have had some specific causes, such as the decline in the construction of new mobile networks:[4]

> Prior to 2000-01, our capex expenditure on the access network was approximately $942 million. That was actual capex expenditure in the narrowband component of our access network. If you recall, that was the year that Sydney hosted the Olympics That was a substantial increase in our investment that year and for all the right reasons: diversity, security et cetera of approximately 10 per cent from the year before, which was the 1999-2000 year. The year after that, which was 2001-02, we did have a reduction of 11 per cent, to $838 million, and in 2002-03, this current year, we have a one per cent reduction in access narrowband. Obviously, we have also had a major increase in that time in the broadband network. To do that we have gone from $30 million in year 2000-01 to $130 million this year. So it has been a quite significant investment in our growth. How have we done that I think that is one of the questions you were alluding to and why has there been a reduction in one? That is the balance of trying to get growth and maintenance programs aligned. At the end of it we are certainly looking at an outcome for the customer, and that outcome needs to be driven by the investment but also the overall customer service.[5]
>
> For example, in the last five years Telstra has committed close to $5 billion in upgrading and developing its network what we describe as the CAN. As I said, our capex over that period has been around $5 billion. To put that into context, that is pretty well more than the New South Wales government spent in six years on staging the Olympics. This expenditure on upgrading the technology used in our network and on the delivery of a more robust network has allowed Telstra to deliver significant consumer benefits in the form of substantially lower telephone call charges and I think that has been

3 Australian Telecommunications Users Group, Submission 89.

4 Mr Bill Scales, Group Managing Director, Regulatory Corporate and Human Relations, Telstra, Committee Hansard, 19 May 2003, p 770.

5 Mr Anthony Rix, Executive General Manager, Service Advantage, Telstra, Committee Hansard, 19 May 2003, p 770.

> well recognised and is on the record as well as reduced maintenance requirements and lower costs in general.[6]

6.10 Notwithstanding these reassurances from Telstra the Committee remains concerned that Telstra has little incentive to invest in infrastructure in light of its dominance of the network and the pressure on it from the financial markets to minimize capex. The reduced investment in infrastructure is likely to impact on innovation, the development of new services and the maintenance of existing infrastructure. This is likely to have its biggest impact in regional and rural Australia where the returns on capex are likely to be lowest and would be further exacerbated by the full privatisation of Telstra. One submission to the Committee expressed the concerns of rural Australia in this way:

> Privately owned telecommunications systems are unlikely to invest in low return areas such as rural Australia, where, arguably, the need for excellent telecommunications is greater than that in cities.[7]

6.11 There is clearly a need for long term government involvement and leadership in telecommunications infrastructure, particularly in relation to rural and regional Australia. The future development of Australia's telecommunications network is too important to be left solely to the decisions of profit driven private businesses.

Demand aggregation

6.12 Demand aggregation is a general term to describe the process under which the users of telecommunications services combine to offer a single contract for the supply of all of their telecommunication needs. By combining their demand they gain greater bargaining power with telecommunications providers and may be able to offer a large enough customer base to a carrier to justify the provision of new infrastructure. The principle of demand aggregation, and its advantages for remote communities, were outlined in the submission from Optus:

> There are some policies that governments can use which minimise distortions in private sector investment. One such policy is through the aggregation of public sector demand, which creates a market sufficiently large to provide an incentive for private investment in regions where normally it may not be profitable. While this demand aggregation policy has a national as well as regional basis, initiatives at the regional level are the most common in most countries. In such an initiative, the government enters into a partnership and shares the cost with the private sector to build the network supported by public sector demand. Yet, the government has to

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6 Mr Bill Scales, Group Managing Director, Regulatory Corporate and Human Relations, Telstra 19 May, p 584.

7 Ms Roslyn Joseph, Submission 32.

> be careful when it 'asks' private companies to provide regional network in order not to reinforce the dominant position of incumbents.[8]
>
> However, overall, achieving scale is promoted by encouraging partnerships between carriers, industry and communities, rather than making funding available to individuals or small groups. Such a strategy will:
>
> > deliver better outcomes for remote communities, lower prices and greater choice;
> >
> > put alternative providers in a stronger competitive position to compete against the incumbent and expand their service offerings; and
> >
> > drive broadband services further into remote communities. As service costs reduce through scale and scope, the potential for these services to be delivered to even more remote, less economic communities increases.[9]

6.13 Some examples of successful aggregation projects were brought to the attention of the Committee. One example is the Reefnet established in Queensland with the support of the Queensland Government. This development has increased infrastructure competition on the main telecommunications backbone on the Queensland coast as well as lowering prices on that route:

> The Queensland government has pursued a very strong policy of demand aggregation, not just to get cheapest costs in telecommunications but to achieve better infrastructure outcomes. …. By marshalling your purchasing power you can actually achieve some good infrastructure outcomes. One example thus far is the Reefnet. There is now competitive fibre up the coast of Queensland between Brisbane and Cairns. There was not a business case to do it, I might add, in the absence of government support. Optus and Leightons with AAPT have built the Reefnet. To support that, $23½ million a year over five years is being spent. How much does that cost taxpayers? Zilch. No money has to be used to build that infrastructure; it is money that we would have already spent. We spend $172 million year on telecommunications in Queensland. All we did was marshal some of that spend and after five years we will go and spend the money somewhere else.[10]
>
> …. the primary reason we did the Reef Network was for competition. As the minister pointed out, there was no competition; there was only one carrier, Telstra, when we put that in place. There are now five carriers on there. As to the specific question of the two-thirds reduction, that is a real

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8 OECD, quoted by Optus in submission 91.

9 Optus, Submission 91.

10 The Hon Paul Lucas, Minister for Innovation and Information Economy, Queensland, Committee Hansard, 30 April 2003, p 531.

> figure. In some cases it is actually more than that. That is an average. I know that two or three years ago a two-megabit link from Cairns to Brisbane cost about $125,000 a year. It is now $25,000 a year for the raw bandwidth. Sure, you have to add the extra costs for the tails onto that, which maybe takes it up to $40,000 or $50,000, depending on where you are, but that is where that figure comes from. It is actually even better than that in some cases. I realise that not everybody wants to buy two-megabit links, so that cost saving is primarily concerned with the larger bandwidths, which are really what we are trying to get into the state anyway. It will take some time for those cheaper bandwidths to flow through into individual telephone calls and data services, but the primary point of having the competition there was so that they would eventually flow through.[11]

6.14 The Queensland Government has also used a similar approach to promote improved mobile phone infrastructure:

> Mobile telephony is another issue that is important in a state like Queensland. We used to have 100 mobile telephone plans operating for public servants. I imagine taxpayers in Queensland would not have been too keen to know that in other words, when anyone wanted a phone they just got whatever the plan was. We have now been able to go to the carriers to ask them what they will do in terms of pricing, and we will end up with four pricing plans. Four carriers have submitted their proposals, and a number of them will involve some infrastructure outcomes. So, again, by marshalling our spend and the process is not finalised yet the question was what additional mobile telephone towers can we get in places. Putting aside the question of the $30 billion that they got from the sale of Telstra, there is no question in principle why the federal government cannot use its spend to do that as well. Frankly, I do not care how they pay to give fair coverage to people between Mount Isa and Townsville; it is just the fact that they do it.[12]

6.15 The Queensland Government is also looking at a similar proposal to aggregate demand in rural and remote communities:

> Our SmartNet proposal is about aggregating demand for bandwidth in rural and remote communities. If you like, instead of having a small pipe for the hospital, a small pipe for the police and a small pipe for the school, you get a big fat pipe that benefits of all of them, including the local community.[13]

6.16 The importance of aggregation as a means of promoting infrastructure development was emphasised in the submission from Optus. It cited both the Queensland Government's Reefnet project mentioned above and demand aggregation

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11 Mr John Spinaze, Director, Infrastructure Development, Queensland Department of Innovation and Information Economy, Committee Hansard, 30 April 2003, p 531.

12 The Hon Paul Lucas, Minister for Innovation and Information Economy, Queensland, Committee Hansard, 30 April 2003, p 537.

13 ibid., p 540.

by the Northern Territory Government as being examples of where it was able to invest in infrastructure because of demand aggregation by governments:

> The Northern Territory Government, for example, in its awarding of most of its business to Optus has embraced both the demand aggregation approach, and the approach of supporting new players to improve the competitive environment. The Northern Territory aggregated all of its IT&T spend into a whole of government arrangement for telecommunications and Internet through a five year contract worth over $110 million. Optus has committed to major infrastructure improvements in the NT and a range of value added services and industry development initiatives.[14]

6.17 Optus also cited the Commonwealth National Communications Fund program, which provided funds for the development of new infrastructure where aggregation could play a role:

> There is one recent Government funding initiative that has adopted this approach - the National Communications Fund (NCF). The NCF was developed as part of the Government's implementation of the Besley Inquiry recommendations. It provided for $50 million for telecommunications health and education services. Successful proposals needed to have matching funding from alternative sources, eg. state or territory governments and industry. The funds were available on a competitive basis, but allocated to the proposals that demonstrated they would be viable and deliver community benefit.
>
> The NCF has been offered in a way that provides greater opportunity for alternative providers to compete against Telstra. The reason for this is that:
>
> Unlike NTN, carriers were able to take the lead with proposals (in partnership with other agencies such as government departments) and by doing so develop proposals that deliver economies of scale and scope for competing against the incumbent;
>
> Selection was based on wider benefits to communities, rather than the lowest cost. This created opportunities for new technologies that are more designed for delivering a range of services to a wide range of users. (Indeed existing technologies face greater hurdles cost effectively meeting broader community benefits.)
>
> A good example of a proposal that has been successful under the NCF was Optus' proposal to deliver education services to New South Wales and Northern Territory School of the Air (SOTA), TAFE and indigenous communities explained earlier.[15]

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14 Optus, Submission 91.

15 ibid.

6.18 Another interesting example of demand aggregation is the Coorong project. The Coorong Communications Project saw the development of new end-to-end infrastructure for broadband data and voice services delivery into the Murray Bridge and Coorong regions of rural South Australia. Networking the Nation funding was used as a catalyst for the project which aggregated voice and data demand from the local municipal council, small businesses and consumers with the purpose of achieving lower charges and enhanced access to broadband. New broadband microwave infrastructure was built by Agile Communications between Murray Bridge and Adelaide, and by the Coorong District Council with the region encompassing Meningie, Tailem Bend and Tintinara.[16] Agile submitted that:

> The Coorong Communications Project is a nationally significant example of the successful creation of a new, sustainable, alternative to Telstra for Telecommunications service delivery in the bush. Sadly it is one of the few such examples that exist, despite the financial magnitude of the NTN grants process.[17]

6.19 Although the Coorong network was originally built around the provision of voice services and data services for local government, the new infrastructure has enabled Agile Communications to provide wireless and fixed line broadband services in areas where they were previously unavailable:

> There is a township called Murray Bridge in the Coorong area; we are delivering broadband services to a school in that area today, on trial, that exceed the speed of an ADSL service, using wireless systems. It all works fine and we are going to build more of it. Similarly, we are about to become the first company to deploy the Telstra style of ADSL on copper lines in a rural community that has no Telstra ADSL today. The township of Meningie, another community in the Coorong area, will have that going by about the end of June. That means that Meningie will be the first place in Australia to have faster broadband than that which Telstra provides, on the same copper lines that Telstra uses. That, for us, is a very positive example that the Coorong network is working.
>
> The reason we have been able to afford to broadband enable that town is that the Coorong network connects that town back to Adelaide. So, having built a backbone that is sustainable, we can use it to deliver broadband services at the edges of that network[18]

6.20 Agile Communications' Managing Director, Mr Simon Hackett, told the Committee:

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16 Agile Communications, Submission 136.

17 ibid.

18 Simon Hackett, Managing Director, Agile Communications, Committee Hansard, 8 May 2003, p 579.

> We have put in nodes of that network simply by leasing capacity from other carriers in Sydney, Melbourne and Brisbane. In these places the business model is able to work. Ballarat and Bendigo are big enough to make a broadband model work, but Berri and Renmark are marginal. The townships in the Murray-Mallee area are so small that, really, they always get left out of this sort of situation. It is still the case that, once you manage to bootstrap them, you can keep them running….In our experience, for the sort of model we deploy, the limit of viability below which you cannot make it work without subsidy is around 25,000 to 30,000 people in a township.[19]

6.21 A further example of demand aggregation is the Norlink e-town process. Norlink is a community based company involving eight community partners based in the northern rivers region of NSW. It intends to provide broadband, voice and virtual private network services using wireless local loop technology.[20] Its CEO, Mr Keith Davidson, advised the Committee that:

> In 2001, Norlink received federal funding to establish an alternative local loop trial in the Northern Rivers using wireless and taking it to full commercialisation. This trial is being conducted in four communities in the Northern Rivers—Mullumbimby, Maclean, Kyogle and Lismore, which was added with the support of the New South Wales state government. To do this, we have developed what we call a prototype regional telco model that incorporates local ownership, partnerships, complementary use of existing infrastructure and community development—what we are calling the Norlink e-town process.
>
> We believe that local community ownership is the key—particularly to identify real infrastructure needs, to reinvest locally and to build communities through the ownership and development of community development initiatives. We also recognise that communities cannot do this alone and the development of extensive partner relationships is important to success. These partnerships can include relationships with vendors, backbone providers, building partners and other carriers for other service offerings. Income from existing and new infrastructure will not deliver sufficient returns to the entity in the short term to ensure sustainability; therefore, the need to offer services over existing infrastructure is important, providing a strong base from which to grow. Most importantly, reinvesting in the community is key. Identifying areas of social and economic development can be enhanced by better telecommunications and by investing in these areas—for example, investing in IT skills and in the deployment of infrastructure to remote or more difficult access sites.[21]

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19 Simon Hackett, Managing Director, Agile Communications, Committee Hansard, 8 May 2003, p 581.

20 Norlink Communications Ltd, Submission 132.

21 Mr Keith Davidson, Chief Executive Officer, Norlink Communications Ltd, Committee Hansard, 30 April 2003, p 520.

6.22 Canada, a country with similarly vast distances and isolated communities, has shown the way with its Broadband for Rural and Northern Development Pilot Program (BRAND). It is essentially a program aimed at helping communities without broadband access to develop a community-based strategy for acquiring the technology.

6.23 The Committee was also advised of some practical difficulties and limitations on demand aggregation.

> The most difficult part of this whole process to achieve aggregation is: what is the process? Nobody has come up with a model on how to work it out. Who do you talk to local government, local businesses? Who is the driver of this process? Basically this comes back to one of the recommendations from the Broadband Advisory Group's report to encourage a brokerage system where people are specifically targeted to bring together all these community needs. But at what level you can do this government or individual business I really do not know.[22]

6.24 In advertisements in the national media in January 2004, the then National Office for the Information Economy called for applications from eligible regional, rural and remote organisations for funding for Community Based Broadband Demand Aggregation Brokers. The advertisement stated that funding for Demand Aggregation Brokers is a key element of the National Broadband Strategy, developed in response to the Regional Telecommunications Inquiry.

6.25 Witnesses also gave evidence about the practical limitations on demand aggregation. For example, Professor Eric Wainright, stated:

> There are some real barriers to university, government and business aggregation. The Queensland government, for example, is presumably going ahead with its SmartNet arrangements to allow Queensland government departments access to a better deal, no doubt, than they can get at the moment. But they cannot collaborate with us, because we are across the border. We cannot go into their deal; they cannot come into our deal. When you look at it on a city-by-city, town-by-town basis Innisfail, Ingham, Mareeba, Atherton; all the places around with a capacity of 10,000 to 20, 000 none of those communities can gain at the moment. And none of us can guarantee that in all of those smaller places we have sufficient demand to persuade Telstra, an energy company, Optus or anybody else to invest. At the end of the day, prices stay very high, even though a lot of the capacity is in the ground already. From an individual carrier point of view, they say, 'Show me five years of growth in demand and income coming in.'[23]

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22 Dr Sorin Barbulescu, Institute for Telecommunications Research, University of South Australia, Committee Hansard, 8 May 2003, p 567.

23 Professor Eric Wainright, Pro-Vice-Chancellor, Information Services and Technologies, James Cook University, Committee Hansard, 28 April 2003, p 449.

6.26 In evidence to the Committee Optus was critical of the approach taken by the Commonwealth to filling its own telecommunications needs. Optus criticised both the failure of Commonwealth departments and agencies to aggregate their demand, and the failure to take into account the wider public benefit in allocating government telecommunications contracts.

> The Commonwealth, on the other hand, has a "silo" approach to telecommunications purchasing that prevents creative leveraging. Agencies and departments make their own purchasing decisions albeit within a centralised framework managed by the National Office of the Information Economy (NOIE). The goal of the department or agency is to obtain the best commercial deal that it is able.
>
> The limitation of this approach is that it can make the aggregation of demand by multiple agencies and departments difficult. Indeed, there has been a recent rejection of a whole of Government approach to IT&T outsourcing. While this may have a valid rationale, it means that demand aggregation is not feasible where it is most needed in regional areas. Although NOIE has examined mechanisms to aggregate demand for departments and agencies in regional towns Project "Golden" this initiative has not progressed. In Optus' view, it would be desirable for further resources to be provided to pursue this initiative.[24]
>
> The other problem with the current approach is the potential missed opportunities that can arise from purchasing decisions being made purely on the basis of commercial interests and without regard to broader government objectives or the wider public benefit.
>
> For example, assume a Commonwealth agency is tendering for the provision of bandwidth between central Australia, and the East Coast. One of the proposals of a bidding carrier is to build a new intercity fibre network to provide the service (such as to provide dual infrastructure with the incumbent). Under the current arrangements there would be no consideration by the agency (or the Government) of the benefits that would flow to consumers from the building of a new competitive network, as opposed to simply using an existing monopoly network.[25]

6.27 The importance of government demand aggregation was also recognized by the Small Enterprise Telecommunications Centre (SETEL) whose E-Commerce Forum Taskforce recommended that governments:

> Establish a program to promote Government (covers all tiers of government) demand aggregation and infrastructure development initiatives in regional

24 Optus, Submission 91.

25 ibid.

> and rural areas and to encourage greater participation by industry and regional action groups in support of e-commerce.[26]

6.28 In the Committee's view the Commonwealth could, and should, do much more to promote the development of alternative infrastructure by participating in demand aggregation arrangements. This is particularly important in remote, rural and regional areas where there is no effective infrastructure competition.

26 Small Enterprise Telecommunications Centre Limited, Submission 76.

Chapter 7

Conclusions and recommendations

7.1 Reliable, high tech telecommunications services are one of the key foundations upon which any modern nation is built. Bearing in mind the country's size and relatively small population, the Committee has found that Australia's telecommunications network is generally able to deliver adequate basic services to most Australians. Nevertheless, the Committee's inquiry has revealed some significant weaknesses in the Australian network. The principal weaknesses relate to the inability to provide universal, reliable high speed access to the Internet; the incomplete coverage provided by the mobile phone networks; the existence within the network of outdated equipment such as pair gain systems, inadequate repair and maintenance by Telstra of the network; and declining investment.

7.2 As discussed earlier in this report, the Committee is concurrently conducting a separate inquiry into broadband competition. The Committee's report on that inquiry will examine issues relating to the state of competition in the broadband market and the proposals to enhance competition. The recommendations in that Report should be read in conjunction with the recommendations below.

7.3 Although the problems identified by the Committee's inquiry occurred throughout Australia they are generally worse in the more remote rural and regional areas. While disruption to telecommunications services is an inconvenience to Australians wherever they live, it is these areas where access to reliable communications is often crucial. People in these areas are being forced to place increasing reliance upon telecommunications services because of the declining physical presence of many businesses and government agencies. Unfortunately many people in these areas find that they are unable to compensate for the lack of local services by using modern communications because the local telecommunications infrastructure is not capable of providing adequate data services.

7.4 The evidence from regional areas also stressed the importance of good telecommunications services to the economic development of these regions. Many businesses will not consider relocating to a regional area if the telecommunications network in that area is unable to support their needs. As the importance of telecommunications services to existing businesses in regional areas grows many of them may also be forced to consider relocating to other areas where the telecommunications network is more reliable or offers access to better services.

7.5 One witness, a resident of Bendigo in regional Victoria, emphasised the social dimension of having access to the most up-to-date telecommunications services:

> Twenty years ago I completed an electrical engineering degree at the then Bendigo College of Advanced Education. I had no choice. I had to leave the area to get a job…I want the option for my 10- and 12-year-old sons to, if they want, live in Harcourt North, where I live, on 44 acres overlooking 20,000 square miles – with a broadband connection so that they can videoconference with their employer in Germany, get paid in deutschmark, and clear it through the local bank. That would be a lovely vision.[1]

7.6 In its report in September 2000 the Telecommunications Service Inquiry said that:

> … a significant proportion of those who live and work in rural and remote Australia have concerns regarding key aspects of services which, at this stage, are not adequate. Their concerns relate primarily to
>
> - the timely installation, repair and reliability of basic telephone services;
> - mobile phone coverage at affordable prices; and
> - reliable access to the Internet and data speeds generally.[2]

7.7 The Committee's inquiry confirmed that these remain issues of concern, particularly in rural and remote Australia.

7.8 When the current telecommunications regime came into effect in July 1997 it was designed as a light touch regulatory regime relying largely on competition and self regulation to promote the long term interests of end users and to produce an efficient and internationally competitive industry. Some eight years down the track, the Committee's inquiry has shown that the current regime has failed to meet expectations in many important respects.

7.9 While finding that the Australian telecommunications network delivers a basically adequate level of services, the Committee notes that consumers do not enjoy universal access to services appropriate to a modern community at the start of the twenty first century. There is substantial evidence that Telstra's fixed line network is deteriorating due to reductions in staffing and inadequate capital expenditure. Mobile telephone coverage, although improving, remains patchy. Universal access to fast reliable data services, so vital to a modern economy, is not available. Although some significant progress has been made by some new entrants, especially in the mobile market, the competition regime has failed to produce a strongly competitive environment for most telecommunications services. Telstra remains the dominant

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1 Mr Andrew Cairns, Chief Executive Officer, Bendigo Community Telco Ltd, Committee Hansard, 22 April 2003, p 311

2 Telecommunications Service Inquiry, *Connecting Australia*, 30 September 2000, p 5.

carrier on whom almost all Australians are forced to rely for some or all of their telecommunications needs.

7.10 Compounding these problems, the Australian Communications Authority has been a reactive regulator. It has not been in a position to be proactive in important areas, such as monitoring the state of the Telstra network and requiring that infrastructure be upgraded where necessary.

7.11 The Government's attempts to address these issues have been piecemeal. A plethora of short term programs and new licence conditions have been initiated to try to remedy individual problems. These programs have often been operated in conjunction with Telstra, reinforcing its dominant position in the market, and do not provide consumers with universal access to the full range of modern telecommunication services.

Renewing the network

7.12 The Committee's inquiry brought into sharp focus the rapidly approaching obsolescence of the ageing copper based consumer access network (CAN). It has undoubtedly served Australia well over a lengthy period, especially as Australia's core public telecommunications asset, but its characterisation as 'steam train' technology[3] by telecommunications analyst Mr Paul Budde seems apt. Despite the development of technologies such as ADSL, which has been described as the 'last sweating' of the copper network[4], it is clear that the existing copper fixed line network will not be able to provide the level of services which the public and businesses will need in the not too distant future. While developments in wireless technologies are interesting, especially for services within CBDs and higher density population centres, there is a general consensus that fibre optic holds the key to the future. Clearly, replacing or upgrading the network with fibre will be a major and costly undertaking. The Committee notes that it was only as this report was being finalised that Telstra CEO, Dr Ziggy Switkowski, was reported to have announced for the first time that the company is gearing up to replace its ageing copper network with fibre-optic lines. Even that commitment was muted, representing only $300 million over an unspecified period.[5]

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3 Mr Paul Budde, Managing Director, Paul Budde Communications Pty Ltd, Senate Environment, Communications Information Technology and the Arts Committee Inquiry into Broadband Competition, Official Committee Hansard, 13 November 2003, p 143.

4 Dr Tony Warren, Group Manager, Regulatory Strategy, Telstra Corporation Ltd, Senate Environment, Communications Information Technology and the Arts Committee Inquiry into Broadband Competition, Official Committee Hansard, 12 November 2003, p 74.

5 *The Australian*, All-fibre diet for Telstra network, 22 June 2004.

7.13 The Committee does not believe that Telstra has given sufficient weight to its role as the guardian of the CAN in the past – on which all other access is essentially dependent – and to its obligations to the Australian public as the USO provider. The CAN is a key part of the public infrastructure, and accordingly the public expects that it should be maintained to a high standard.

7.14 The Committee also does not believe that the Government's hands-off attitude to this issue is acceptable, with its patchwork of programs falling far short of a clear, unequivocal policy position in relation to the roll-out of fibre. The Committee believes that it should play a leading role in facilitating and driving that process.

Recommendation 1

7.15 The Government should publicly confirm its acknowledgement that the existing copper fixed line network is becoming increasingly obsolete. Government policy should focus on the objective of having this network replaced with a fixed line network based on fibre to the home technology, or alternative technologies offering similar capacity, over the next decade.

Access to services

7.16 The Committee's inquiry has demonstrated that, while access to services such as mobile telephony and data services have improved, many Australians and particularly those living in rural, regional and remote areas, do not have affordable access to a reasonable standard of service. The 'Digital Divide' between city and bush is narrowing, but is still unacceptably wide.

7.17 The evidence indicated that mobile phone coverage has improved over recent years, but coverage is not universal. Throughout Australia there are significant gaps in mobile phone coverage. These problems exist both in some outer metropolitan areas and in many rural, regional and remote areas of Australia. The lack of coverage in such areas is of particular concern from social, economic and safety perspectives.

7.18 The situation with regard to data services is similar. Decisions about the roll out of broadband in Australia have largely been made on the basis of commercial considerations. This has resulted in a lack of uniform access to affordable broadband. While this problem occurs throughout Australia, once again it is especially problematic in rural and regional areas.

7.19 While the Government’s programs to improve access to broadband have been welcome, they are inadequate and represent a piecemeal approach to the problem. The Digital Data Service Obligation and the Special Digital Data Service Obligation impose an obligation on Telstra to provide a 64 kbps service to all Australians. However, this speed is clearly inadequate for anyone needing a broadband connection. It appears to have been based on the capabilities of Telstra’s ISDN network and imposes no real incentive for network upgrade on Telstra, nor any real benefit for

most Australians. Even Telstra now markets this technology to home users at twice the minimum speed specified.

7.20 The Government's other programs to improve access in rural and remote areas have helped users in some areas but have resulted in the creation of a 'doughnut' area in which neither affordable commercial services, nor government supported services, are available. While numerically few in number, these Australians appear to be the most disadvantaged by current arrangements.

7.21 It is likely that the importance of dial-up access to the Internet will decline significantly as broadband services become more readily available and broadband prices fall. However, it remains an important means of accessing the Internet for many Australians and the Government has not taken sufficient action to improve access to dial-up data services. The 19.2 kbps speed specified by the Government in response to the recommendations of the Regional Telecommunications Inquiry is clearly inadequate. It is based on the speed already being achieved under the Internet Assistance Program and does little to ensure that consumers have access to an adequate service. Nor has the issue of line drop outs been seriously addressed.

7.22 Access to data services is most important in rural and regional areas where access to the Internet can help to overcome some of the problems caused by isolation and the difficulty of accessing other services. Witnesses agreed that it could be the saviour of declining communities. Unfortunately the evidence shows that it is those areas which have the most need which often have the least access to these services.

7.23 Another problem facing users of the network is the extensive use of outdated pair gain systems which impose technological limitations on customer services. As a result of the extensive use of these systems Telstra is providing many of its customers with an inferior service. This is clearly unacceptable.

7.24 It is the Committee's view that universal access to fast, affordable, reliable data services is just as important to Australians as access to voice services. The regulatory regime should be reformed to recognise this.

Recommendation 2

7.25 In recognition of the importance of data services to all Australians the Government should require Telstra to remove from its network as soon as practicable all pair gain systems which do not support broadband services or which restrict dial-up connection speeds.

Recommendation 3

7.26 While acknowledging the interim nature of dial-up Internet services, the Committee recommends that the Government should place a licence condition on all carriers providing voice telephony services requiring that their networks

support a minimum speed for dial up services. That speed should be progressively increased over the next two years to at least 40 kbps.

Recommendation 4

7.27 Consumers should have a legislated right to access, on demand, to information about whether their services are provided via a pair gain system, and about the full range of services which can be supported to their address.

Recommendation 5

7.28 The Government should place a licence condition on the Universal Service Provider specifying that a broadband service providing a minimum data connection speed be made available to all Australians within twelve months.

Recommendation 6

7.29 The dial up and broadband speeds specified above should be reviewed and updated every 12 months to ensure that they remain contemporary to the needs of users. The specified speeds should be based on the capacity of telecommunications networks operating at international best practice standards, not on current services offered by Telstra or by other carriers, or the existing capabilities of the Telstra network.

Delivery of reliable services

7.30 The Committee received considerable evidence from both the users of the network and the workers in the industry about problems with the network. These problems are the first obstacle to one of the key requirements of all customers: a reliable telephone service.

7.31 Leaked Telstra documentation tabled in the House of Representatives on 10 March 2004 confirms the company's recognition of the serious deterioration of the network. It is clear to the Committee that the problems with the network flow from underinvestment by Telstra in network maintenance and repair, and cutbacks in Telstra's workforce. The evidence given to the Committee indicates that the effect of these measures will be long term and may not show up fully for many years. While these measures may have improved Telstra's profitability in the short term, they have done so at the expense of the long term reliability of the network. Telephone services are unacceptably vulnerable to heavy rainfall and lightning storms as a result of poorly maintained cables that need to be kept in service with gas bottles, and cables badly corroded by Telstra's failed seal the CAN program.

7.32 The Government continues to allow Telstra to evade its customer service guarantee obligations through the mass service disruption notice regime. This allows Telstra to blame failures in its poorly maintained cables on weather conditions and

thereby escape responsibility under the customer service guarantee regime. There are very few checks on this process, as the Australian Communications Authority has acknowledged.

7.33 While these problems exist across the whole Telstra network they appear to be most obvious and serious in rural and regional areas.

7.34 The Committee is also concerned about the declining level of capital expenditure on the Australian telecommunications network. The reduced investment in infrastructure can be expected to have a long-term impact on innovation, the development of new services and the maintenance of existing infrastructure. As returns on capital are lowest in regional, rural and remote areas these areas will be the worst affected by any pressure on a fully privatised Telstra to enhance its short term profitability by reducing capital expenditures.

7.35 This effect has already been seen in Telstra's roll-out of ADSL. Decisions about which exchanges to enable for ADSL have been made on commercial grounds, denying new services to Australians living outside the major population centres.

7.36 There is clearly a need for long term government involvement and leadership in telecommunications infrastructure, particularly in relation to rural and regional Australia. The future development of Australia's telecommunications network is too important to be left solely to the decisions of profit-driven private businesses.

7.37 The current regulatory regime is clearly failing to ensure that Australian consumers have universal access to a full range of affordable and reliable telecommunications services. The introduction of some new initiatives, such as the Network Reliability Framework, have been useful but fall far short of what is required. In addition to the measures set out in the Committee's specific recommendations, the role and powers of the Australian Communications Authority need to be generally reviewed and enhanced.

Recommendation 7

7.38 The Universal Service Obligation should be revised to incorporate a guarantee that customers will always be able to obtain a dial tone.

Recommendation 8

7.39 The Universal Service Obligation should be revised to incorporate a guarantee that dial-up Internet connections will not drop out.

Recommendation 9

7.40 The Government should require the Australian Communications Authority (ACA) to conduct an independent inquiry into the state of repair of Telstra's

customer access network and the Government should, if necessary, use its powers to direct Telstra to bring the network up to an acceptable operational standard. As a part of the inquiry the ACA should examine technical standards and regulations, including those relating to preventing the ingress of water into CAN cables, and amend those standards and regulations so as to protect the physical integrity and ensure adequate maintenance of the customer access network.

Recommendation 10

7.41 The role and powers of the Australian Communications Authority (ACA) should be urgently reviewed and enhanced so that it can effectively and proactively regulate the Australian telecommunications network. In particular the ACA should have the power to investigate the condition of the Universal Service Provider's network and require the Universal Service Provider to make improvements to its network where the expenditure can be justified in the public interest. The Government should respond promptly to the recommendations of the Department's Universal Service Obligation and Customer Service Guarantee Review.

Recommendation 11

7.42 The Government should immediately review the operation of the customer service guarantee regime to ensure that it provides a high level of protection for consumers and that mass service disruption notices cannot be used by carriers to avoid their obligations to properly maintain their networks and provide an acceptable standard of service to consumers.

Recommendation 12

7.43 The Government should direct the Australian Communications Authority to regularly monitor the level of faults on data services.

Access for people with disabilities

7.44 The Committee is generally satisfied that the needs of people with disabilities are being given appropriate priority. However, the Committee remains concerned that further privatisation of Telstra and increased competition in the industry may result in the needs of people with disabilities being overlooked.

7.45 The Committee's inquiry identified the provision of disability equipment as a potential weakness in the current regime. People with disabilities are largely reliant on the Telstra disability equipment program to meet their needs and the evidence given to the Committee suggests that this may be limiting their choice of carrier and the choice of equipment available to them. Further, the Committee is concerned that carriers fail to give adequate consideration to the needs of people with disabilities in

planning for the introduction of new technology, resulting in people with disabilities effectively being shut out of access to such technology when it is introduced.

7.46 Following the conclusion of the Committee's hearing program, the Australian Communications Authority reported to the Minister for Communications, Information Technology and the Arts on its review of the provision of payphones in Australia. The ACA recommended that:

- the payphone industry and disability peak bodies should consult through an ACIF working group, and work together to develop a Payphone Accessibility Code for endorsement by HREOC; and
- Telstra should continue to increase payphone numbers and that other specialist payphone firms should provide TTY payphones when they are replacing an existing Telstra TTY payphone.[6]

7.47 The Committee has not had the opportunity to examine the detail of these proposals. However, it supports the general thrust of the ACA's recommendations.

Recommendation 13

7.48 The Committee commends the findings of the Payphone Policy Review as it relates to services for the disabled for close examination by the Government.

Recommendation 14

7.49 The Government should fund the establishment of an independent disabilities equipment program using funding from the Universal Service Levy.

Recommendation 15

7.50 The Government should require carriers to engage in extensive consultations with representatives of people with disabilities at an early stage in the planning process for the introduction of new telecommunications technology to ensure that appropriate disability equipment will be available in conjunction with the introduction of new technology.

Facilitating competition

7.51 The current regulatory regime has failed to deliver a strongly competitive environment in many key areas. Telstra still remains the dominant carrier and, as the ACCC has acknowledged, the progress of competition is slowing. Importantly, the

6 Australian Communications Authority, Payphone Policy Review, 2004, pp 39-43.

benefits of competition have largely flowed from the retail market rather than from the development of competition between infrastructure providers.

7.52 An issue which was repeatedly raised with the Committee was the unavailability of information on the location of existing infrastructure. At present there is no comprehensive inventory of infrastructure operated by telecommunications carriers. This is a significant obstacle for small and medium carriers, governments and other organisations which are trying to plan the development of new infrastructure.

7.53 At present the Federal Government is not using its own programs and contracts for telecommunications services to promote competition. The frequent involvement of Telstra in Government programs has seen Commonwealth funds flowing into Telstra and helping to cement its position as the dominant carrier. The Committee believes that Government programs aimed at enhancing telecommunications services for consumers should not also have the effect of inhibiting the development of competition. The Government could also use its own buying power, as a major user of telecommunications services, to foster a more competitive industry.

7.54 The Committee will discuss other aspects of telecommunications competition in more detail in its report on its inquiry into broadband competition.

Recommendation 16

7.55 The ACA should be empowered and required to develop a comprehensive inventory of all significant telecommunications infrastructure, including geospatial data on Telstra's existing customer access network and mobile phone coverage, and make that information available to other carriers and service providers, local government, and other interested parties to facilitate planning for new infrastructure.

Recommendation 17

7.56 Future Government programs aimed at enhancing telecommunications services should be designed to prevent Telstra from using those programs to maintain or strengthen its dominance of the telecommunications market. Where necessary this may involve restricting Telstra's participation in some aspects of those programs.

Recommendation 18

7.57 In contracting for telecommunications services, government agencies and departments should be directed to design tender processes which facilitate participation by small and medium carriers, and to take into account the policy objective of developing a more competitive telecommunications industry in assessing tenders.

Recommendation 19

7.58 In contracting for telecommunications services in rural and regional areas where there is limited infrastructure competition, government agencies and departments should be directed to participate where possible in demand aggregation arrangements with the objective of improving the incentives for the development of competitive infrastructure.

Government Members' Dissenting Report

Introduction

The Government members of the Committee strongly reject the approach taken in examining the Australian telecommunications network in this Report and the conclusions and recommendations made by the non-government majority of the Committee. Instead of being an objective examination of the state of the network, the Report is a thinly veiled, politically motivated, attack on one participant in the industry, Telstra.

The Opposition's motives for referring this inquiry to the Committee were made clear in its media statements at the time. Senator Mackay set the tone with a media release entitled 'Senate set to examine Telstra'. After losing the 2001 election, the Opposition had declared that all its policies were up for review, except one: opposition to the further privatisation of Telstra. The inquiry was simply a fishing expedition to find something about which to criticise Telstra. Senator Mackay's media statement went on to say:

> At the moment it is difficult to get all the information from Telstra to consider this issue in detail, but that material can be fully ascertained through a Senate Inquiry. This process will provide a far more accurate picture of service levels than the Government's current plan to proceed with T3 after canvassing opinions amongst its own backbench.
>
> Labor remains implacably opposed to the full privatisation of Telstra – but now is the time to put Coalition claims to the test before there is any further attempted dilution of Telstra's remaining public ownership.[1]

In light of the above it was no surprise to find that the Committee's report concluded that 'the evidence presented to the Committee strongly suggests that full privatisation of Telstra should not proceed until a more competitive market for telecommunications is established'.[2]

Senator Allison from the Australian Democrats, the then Committee chair, thought the inquiry was for a different purpose and issued a press release emphasising that the inquiry would examine the prospects for universal broadband access. It is, therefore, a little difficult to understand why the Democrats subsequently supported a separate inquiry into broadband while this inquiry was still underway. She also suggested that

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1 Senator Sue Mackay, *Senate set to examine Telstra*, Media Statement, 25 June 2002.

2 Report, paragraph 5.64

the inquiry would look at the regulatory and other measures that might be necessary to ensure appropriate investment in the network.[3]

The intent of the Senators who supported the proposal to refer this inquiry to the Committee is reflected in its Terms of Reference. They clearly implied in items (c) and (d) of the terms of reference that services were inadequate and needed to be improved before they had taken the trouble to examine any evidence. Although the terms of reference referred to the *Australian* telecommunications network, the Committee's report and its recommendations focus almost exclusively on Telstra's operations and the alleged flaws in its network.

Over recent years the Government has focused heavily on the development of a modern, efficient, competitive telecommunications industry which will provide Australians with the services they need. To this end the Government has initiated a series of independent inquiries into telecommunications. Both the Besley and Estens inquiries were focussed on examining the adequacy of telecommunications services. The Government has acted on the recommendations of those inquiries to ensure that service levels are adequate. The Government tasked the Productivity Commission with the role of examining the effectiveness of competition regulation in the industry and again acted on its recommendations to ensure that the regulatory framework supported the development of competition.

Regrettably the Committee's report, rather than seeking to genuinely assess the state of the network, is focussed on a union driven agenda of turning the clock back to the days when a bloated public service bureaucracy ran telecommunications. The members of the Committee who support this report are seeking to once again burden this country with one of the world's most expensive and outdated telecommunications networks.

Network faults and maintenance

The terms of reference called on the Committee to examine the capacity and adequacy of the Australian telecommunications network. Instead the Committee spent an inordinate amount of time discussing air bottles and gel as the Labor members of the Committee searched for grounds on which to find real or imaginary faults with the Telstra network and to promote the union's campaign to expand the size of Telstra's workforce.

At one hearing after another witnesses from the Communications, Electrical and Plumbing Union were brought before the Committee to tell us how much better things were in the good old days when Telecom/Telstra employed more of their members. We heard from past and present CEPU officials and members in Wollongong, in Melbourne, at two separate hearings in Sydney, in Launceston, in Cairns and in

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3 Senator Lyn Allison, *Broadband key issue for Senate inquiry*, Media Release 02/329, 25 June 2002.

Bunbury. However, these witnesses were never able to produce any substantial evidence that the Telstra network had become unserviceable and fault ridden as a result of the efficiencies introduced over recent years which they vociferously condemned.

Unfortunately the evidence given by union representatives was not always reliable. During the Committee's hearing in Cairns Mr Paul White from the CEPU told the Committee that 'there are massive service disruptions throughout north Queensland in monsoon season'[4]. When the Committee questioned Telstra about these disruptions Telstra was able to advise the Committee that it 'has no record of any CSG Exemption Public Notices of MSD's in the area of Far North Queensland during 2002/03.'[5]

Similarly the Committee spent an extraordinary amount of time discussing the use of gel to seal main cables and the maintenance of air pressure in cables. Reading the Hansard transcripts and the Committee's report might lead an uninformed person to the conclusion that the main cables in Telstra's network were on the verge of collapse. But once again when the evidence was tested it was found to be sadly wanting. When Telstra was questioned about the impact on its network of a series of six severe storms in Queensland over a seven day period it was able to advise the Committee that:

> Over that period of time – and we have spoken in this forum and many forums about main cables and air pressure and the CPAS network – there was no evidence of main cable failure. That means that one major component of our network, which was under contention through the network inquiry and through this, stood up the whole time.[6]

While the Opposition and Democrat Committee members were obsessively pursuing their mission of finding something about which to criticise Telstra, they ignored the remainder of the industry. The Australian Communications Authority's Performance Monitoring Bulletin shows that while Telstra's call centre responds to 93% of operator–assisted international and long distance calls within 10 seconds, the Optus call centre is only able to respond to 86% of calls in the same time frame.[7] However, in the Committee's report you will not find any evidence of the Committee seeking to examine the performance of other carriers. The Committee was focussed on Telstra to the exclusion of everyone else.

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4 Mr Paul White, Branch Secretary, Postal and Telecommunications Branch, Communications, Electrical and Plumbing Union, Official Committee Hansard, 28 April 2003, p 471.

5 Telstra, Submission 107f.

6 Mr Anthony Rix, Head of Service Advantage, Senate Environment, Communications, Information Technology and the Arts Legislation Committee, Additional Budget Estimates, Proof Committee Hansard 16 February 2004, p 112.

7 Australian Communications Authority, *Telecommunications Performance Monitoring Bulletin*, Issue 27 – December 2003 Quarter, p 13.

During the inquiry the Committee received submissions from a number of witnesses who were experiencing difficulties with services provided by Telstra. Telstra responded by contacting some of those people so that it could rectify any problems with their services. An Opposition member of the Committee then made an unsubstantiated claim that Telstra was harassing witnesses with the result that Telstra agreed to cease contact with those submitters in order to remove any possibility that its actions would be misunderstood. This may have suited the Opposition's political agenda by ensuring that the level of dissatisfaction with Telstra's services was sustained, but it left those customers with unresolved complaints about their services. In the Opposition's view it seems that Telstra is equally at fault when services are inadequate and when it seeks to improve them.

It is interesting to compare the figures for the performance of Telstra in 2003 with those for 1996, the last under the previous Government. While comparable figures are not available for many measures the following are illustrative.

Comparison of Telstra Performance 1996 and 2003

		1996[8]	2003[9]
Call Centre Performance			
% of directory assistance calls answered within 10 seconds		33	94
% of directory assistance calls leaving without being answered		18	2
% of calls to Telstra's service difficulties answered within 15 seconds		66	73
% of calls to Telstra's service difficulties queue leaving without being answered		13	6
Payphones			
Average hours to clear a payphone fault		24	12
% of public payphones operating at any one time		96	98.8
New Connections			
% of in place new connection completed within the specified timeframe		86	97
% of customers connected to new services within the specified timeframe		83	92
Fault Rectification		1996	2003
% of faults in metropolitan/urban areas cleared within one working day	Metro-business Metro-residential Urban	79 51	 90
% of faults in country/rural areas cleared within two working days	Country Rural	84	 93

8 Australian Telecommunications Authority, *Quality of Service Bulletin*, Issue 9, March Quarter 1996.

9 Australian Communications Authority, *Telecommunications Performance Monitoring Bulletin*, Issue 27, December 2003 Quarter.

The above comparisons clearly show that despite all of the criticism of Telstra during this inquiry, its performance has significantly improved since this Government came to office and opened up the telecommunications industry to full competition. The Government Senators believe that there is still room for further improvement in Telstra's services. However, the suggestions in the Committee's report that services have drastically deteriorated and that the network is in danger of collapse are clearly not borne out by the evidence.

When this inquiry was set up the then Minister for Communications, Senator the Hon Richard Alston, said that:

> Labor has already totally made up its mind on Telstra's service levels before it has seen the evidence. Because of its unsustainable opposition to any further sale of Telstra, Labor has no political choice but to conclude that services are deficient regardless of the facts presented.[10]

His misgivings at the time that the inquiry was established have been completely vindicated over two years later.

Internet Access

In its report the Committee has recommended that carriers be required to increase the dial-up speed supported by their networks to at least 40 kbps over the next two years. While the aim of this proposal is unobjectionable in principle, it fails to address the issue that dial-up Internet access is an ageing technology and that the cost of such an upgrade would be difficult to justify. The Committee's report correctly identified the fact that the number of dial-up subscriptions was already in decline last year. This trend can be expected to accelerate rapidly now that broadband prices have fallen to the point where the cost of broadband is comparable to the cost of dial-up access. In light of this, it is difficult to see how the Opposition can justify a massive investment in increasing the speed of dial-up access for a declining number of users.

The Committee has also failed to clearly address the issue of how this upgrade is to be funded. The estimated cost of such an upgrade is at least $5 billion dollars.[11] It would have been helpful if the Opposition and the Democrats had clearly stated whether they wanted to take this money out of the pockets of Telstra's shareholders, or to fund the project by blowing a $5 billion hole in the Federal budget.

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10 Melissa Stevens, *Senate sets up telco inquiry*, West Australian, 26 June 2002.

11 Mr John Stanhope, Chief Finance Officer and Group Managing Director, Finance and Administration, Telstra Corporations Ltd, Official Committee Hansard, Senate Environment, Communications, Information Technology and the Arts Legislation Committee, Inquiry into the Telstra (Transition to Full Private Ownership) Bill 2003, 2 October 2003, p 78.

The Government has already acted to ensure that all Australians have access to a minimum dial-up speed of 19.2 kbps. This speed has been criticised as being too slow for some purposes but the Government's intention was not to identify an ideal speed or to try and dictate to industry what products to offer consumers. The Government mandated a minimum requirement that provided all Australians with basic access at a speed which was achievable both in light of the existing telecommunications infrastructure and the cost of upgrading.

The majority report has also made some equally dubious recommendations about higher speed Internet access. The Committee recommends that a licence condition be placed on the Universal Service Provider requiring that a minimum data speed be made available to all Australians within twelve months. The Digital Data Service Obligation (DDSO) already does that. Once again the Government has not attempted to tell the industry what its customers want, but has specified an achievable minimum speed that all Australians can access. The Government has also introduced programs such as the extended zones program and HiBIS to bring even faster speeds within the reach of all Australians.

Pair Gain Systems

The majority report recommends that Telstra remove from its network all pair gain systems which restrict dial-up connection speeds. We have already discussed the possible cost of this type of upgrade above but it is worth noting the measures which Telstra has already undertaken on this issue in response to the finding of the Regional Telecommunications Inquiry. Telstra states that it has:

- introduced processes to ensure that pair gain systems operate to their design level of performance;
- undertaken additional network activities in some instances where Internet Assistance Program (IAP) customers may not be able to achieve 19.2 kbps minimum equivalent throughput due to causes within Telstra's fixed network; and
- assisted customers who are accessing data speeds in excess of the IAP minimum equivalent throughput but who are not achieving the maximum data speed possible using their existing modem or computer configuration.[12]

The majority report recommends that Telstra be required to remove from its network all pair gain systems which do not support broadband services. In evidence to the Committee, Telstra has already outlined a range of approaches it is taking to address this issue. If Telstra's solutions do not effectively address the problem then it might

12 Telstra, *Telstra update on its Response to the Regional Telecommunications Inquiry (Estens Inquiry)*, February 2004.

be appropriate for a Government to act after a reasonable interval. However, broadband equipment and technologies are evolving rapidly and it would be premature for any Government to assume that there is a long term problem which industry is unable to address. The worst possible outcome would be to have politicians trying to dictate to telecommunications companies how they should design their networks.

Once again the Opposition and Democrat members of the Committee have avoided specifying who is to pay for their proposals.

The Committee also recommended that the USO be revised to incorporate a guarantee that customers will always be able to obtain a dial tone. This recommendation is apparently aimed at concerns that Telstra customers connected through 6/16 and similar pair gains systems may be affected by congestion problems. This issue has already been addressed by the Government.

The Deed of Undertaking signed by the Government and Telstra requires that the company progressively improve the standard of service on those systems until they reach a specified system grade of service target. That target is that during the fifty busiest half-hour periods of the week there will be not more than five chances in a thousand that a call on a particular system will not be able to be completed. This is a very demanding standard which will ensure that consumers connected via those systems have reasonable access to the network at all times.

In evidence to the Committee Telstra advised the Committee that old pair gain systems which do not support modern services are no longer being purchased by Telstra and in some cases are being removed or phased out. The new systems now being acquired and installed by Telstra, such as the CMUX-AU, support the full range of voice and data services. Given that some of these systems are pre-war, one would expect Telstra's efforts to phase them out would be applauded, not criticised.

Access programs

In its majority report the Committee has criticised the Government for introducing programs to improve access to telecommunications services and allowing Telstra to participate in those programs. Of the programs mentioned in the report only the Internet Assistance Program was specifically conducted in conjunction with Telstra. That program was part funded by Telstra and aimed directly at improving dial-up speeds available on Telstra's PSTN network. At no stage did any of Telstra's competitors complain to the Committee that they were being excluded from these programs.

All of the other programs were, and are, open to the whole industry. A variety of other telecommunications companies have tendered for or participated in Government programs. In Chapter 4 of its report the Committee cites Telstra's intention to use funding under the HiBIS program to improve the availability of ADSL services as an example of a Government program being used to consolidate Telstra's market dominance. The claim is contradicted by the fact that Telstra was not one of the

providers of services under the scheme named when the Minister for Communications, Information Technology and the Arts announced the first two Internet Service Providers approved under the scheme.[13]

The Government Senators consider that the focus in any Government program aimed at expanding the services available to consumers should be on delivering services to Australians in need at the lowest cost to the Government. In the view of the Government Senators, placing restrictions on Telstra's participation in these programs will not only disadvantage Telstra and its shareholders, but may also entrench the disadvantages faced by users of telecommunications services in rural, regional and remote areas of Australia.

Competition

In its report the Committee claims that the current regulatory regime has failed to deliver a competitive environment. While this view was strongly expressed during the Committee's hearings by Telstra's rivals and some commentators, it is not sustainable in the light of any objective examination of the industry. Competition may be developing more slowly in some areas than Telstra's rivals would like, but the history of telecommunications since the introduction of the current regime has been one in which Telstra's market share has been slowly but steadily eroded. Strong competition already exists in mobile telephony, the provision of long distance voice services, the reselling of local call and broadband services, and across the full range of services in capital city CBDs.

When Telstra and Optus were rolling out their rival HFC networks, they did not make that installation available in regional Victoria or in the Australian Capital Territory. Their failure to provide service to those markets created an opportunity for two new companies, Neighborhood Cable and TransACT, to establish their own infrastructure-based networks in those markets. In the past consumers in those markets would have had no other option than to rely on whatever services Telstra offered them, but because this Government opened up the industry to competition they now have choice. This is another concrete example of the positive effects of competition.

There is evidence that infrastructure based competition in other areas will grow over coming years. As an example, the Committee's Report notes Optus is already considering rolling-out its own broadband network. Recently iiNet announced its intentions to roll-out a national broadband network in competition with Telstra.[14]

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13 The Hon Daryl Williams MP, Minister for Communications Information Technology and the Arts, *First providers approved to supply affordable broadband services to regional Australia*, News Release 89/04, 18 June 2004.

14 Kate Mackenzie, *ISP goes it alone on fast net*, The Australian, HTTP://theaustralian.news.com.au/printpage/0,5942,9865349,00.html, 17 June 2004.

In 2000 the Government referred the issue of Telecommunications Competition Regulation to the Productivity Commission. In response to that reference the Productivity Commission provided the Government with a comprehensive 580 page report on the state of competition in the telecommunications industry and on ways in which competition regulation could be enhanced.[15] The Government Senators commend the Government for its diligence in addressing this issue and acting on the major recommendations of that report. In our view the recommendations of the non-government majority on the Committee make no significant contribution on this issue.

Benefits from telecommunications reforms

In the majority report the Opposition and the Democrats have set out to portray an industry in which there is little competition and therefore little pressure on the incumbent, Telstra, to lower prices. In fact the prices paid for telecommunications services have fallen dramatically since the introduction of the current competition regulatory regime. The Australian Competition and Consumer Commission (ACCC) recently reported on changes in the prices paid for telecommunications services in the five year period between 1997-98 and 2002-03.[16] The ACCC found that:

- local call prices for residential customers fell by 34.8%;
- national long distance call prices for residential customers fell by 26.4%;
- international call prices for residential customers fell by 58.9%;
- fixed to mobile call charges for residential customers fell by 13.3%; and
- overall the price of PSTN services for all customers fell by 18.1%.

These figures show that the regulatory reforms introduced by this Government are delivering real savings to Australian consumers and businesses. The benefits from a more efficient telecommunications industry have also flowed through to the wider economy. In 2003 the Allen Consulting Group was asked to look at the benefits which have accrued to consumers and small business following the passage of the *Telecommunications Act 1997* and Part XIB and Part XIC of the *Trade Practices Act 1974*.[17] That report found that:

- The efficiency gains brought by the telecommunications reforms have increased both aggregate employment and real wages. In 2002-03 national employment had been increased by about 54,000 jobs. In addition, real

15 Productivity Commission, *Telecommunications Competition Regulation*, Report No 16, 21 September 2001.

16 Australian Competition and Consumer Commission, *Changes in the prices paid for telecommunications services in Australia 1997-98 to 2002-03*, 31 May 2004, p 63.

17 The Allen Consulting Group, *Benefits Resulting from Changes in Telecommunications Services*, 30 October 2003.

wages are estimated to be 3.07 per cent higher than they would have been in the absence of the telecommunications reforms.[18]

- The benefit per household is estimated to be worth between $330 and $1,028 (in 2002-03 dollars) by 2002-03. These per household benefits can be aggregated and were worth between $2,482 million and $7,721 million by 2002-03 to the Australian economy at large.[19]

- This analysis reveals that in 2002-03 small business was 2.78 per cent better off than it would have been in the absence of the telecommunications reforms. The telecommunications reforms since 1997 have resulted in a benefit of $1790 million per annum.[20]

- Not surprisingly, the telecommunications industry is the biggest beneficiary of the telecommunications reforms, with output being around 97 per cent higher in 2002-03 than would have been the case in the absence of the reforms.[21]

In addition to the financial and economic benefits outlined above, the Government's telecommunications reforms have facilitated the introduction of a greatly enhanced range of services. Ten years ago mobile phones were a new technology available mainly to the business sector while broadband access to the Internet was unknown to most Australians. Today services like these are available to all Australians through a range of terrestrial and satellite services. While the availability and cost of some services may not satisfy all consumers, every month sees the reach of these new services extended to more Australians while prices remain stable or fall.

Conclusion

The Government's telecommunications reforms have brought enormous benefits to all Australians. A wider range of telecommunications services are available than ever before. The cost of those services has fallen as a result of the Government's actions in opening up the industry to competition and this process has brought significant economic benefits to the Australian economy, and it will continue to do so. To ensure that all Australians share in these benefits, the Government has embarked on a series of reviews of the telecommunications industry and has acted on the recommendations of those reviews. Several of these have only recently been introduced and it is ludicrous for the majority Report to condemn them at this early stage.

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18 ibid., p v.

19 ibid.

20 ibid.

21 ibid., p vi.

Contrary to the assertions contained in the majority report, the Australian telecommunications network is now providing all Australians with reasonable, reliable and equitable access to the full range of telecommunications services. During the Committee's inquiry a great deal of evidence was given which suggested that the network was in a parlous state and in imminent danger of collapse. An objective examination of all of the evidence simply does not support that conclusion. While fault levels fluctuate from month to month and from year to year there is no evidence of gross deterioration in the condition of the network.

To ensure that the network continues to operate reliably the Government introduced the system of Customer Service Guarantees and the Network Reliability Framework. These mechanisms ensure that any failings in the network are identified and acted upon and give consumers automatic relief if service standards fall to an unacceptable level. This is a far better approach than to hand the design and management of the network over to politicians and bureaucrats, as the Opposition and the Democrats apparently want to do.

The only area in which the majority Report makes a positive contribution is in its recommendations on the provision of telecommunications services for people with disabilities. The Government members of the Committee will be encouraging the Minister to carefully consider those recommendations.

As the evidence we have outlined above shows, the network is more reliable than it was under the previous Government, it supports a wider range of services than ever before, and the cost of those services has fallen. There is naturally room for further improvement in all of these areas, as one would expect, and Telstra has programs in place to progressively address all such issues. However, in the view of the Government members of the Committee the remaining recommendations contained in the Report do not make a useful contribution to the development of the Australian telecommunications network and we do not support them.

Senator John Tierney
Senator for NSW

Senator Tsebin Tchen
Senator for Victoria

Appendix 1

List of submissions

1	Thompson Consulting Engineers Pty Ltd
2	Mr Richard Millburn
3	Mr A Priede
4	Mr Steve Judd
5	Mr Russell Roberts
6	Hawkesbury Radio - 89.9 FM
7	Ms Lorraine Boyd
8	Mr Robert Ardill & Mr Grant Roper
9	Mr Rodney Bradley
10	Mr Roy Matthews
11	Break O'Day Council
12	Yarriambiack Shire Council
13	Mr/s R and P Patterson
14	Ms Inge Micheelsen
15	Guyra Shire Council
16	Shire of Nannup
17	Hay Shire Council
18	Mr Paul Clapham
19	King Island Council
20	Midac Technologies (Australia) Pty Ltd
21	Mr Andrew Freeman
22	Mr David Fraser

23	Parry Shire Council
24	Western Australian Council of State School Organisations Inc
25	Ms Jill White
26	Ms Jennie George MP
27	Ms Joanne Johnston
28	Mr Peter Hanson
29	Mr Peter Kane
30	Mid Murray Council
31	Mr Roy Matthews
32	Ms Roslyn Joseph
33	Macedon Ranges Shire Council
34	Crookwell Shire Council
35	Mr Chris Tangey
36	Ms M Revell
37	Country Women's Association of New South Wales
38	District Council of Grant
39	Council on the Ageing (Australia)
40	Deafness Forum of Australia Ltd
40a	Deafness Forum of Australia
41	Ms Ann Waterford
42	Orana Regional Development Board
43	Gulf Savannah Development Inc
44	Government of Western Australia
45	Copmanhurst Shire Council
46	Mrs Carol Richard
47	Burdekin Shire Council

48 Northern Territory Government

49 Ms Ann Corcoran MP

50 ACT Government

51 Cabonne Council

52 The Hon Dick Adams MP

53 Mr Peter Elphinstone

54 South East Local Government Association Inc

55 Mr and Ms Charles and Margaret Hick

56 Three Rivers Landcare Group

57 Ewan Community North Queensland

58 Hidden Valley Community

59 Upper Burdekin Progress Association

60 Aramac Shire Council

61 Consumer Law Centre Victoria Ltd

62 Mr Malcolm Moore

63 Mr Frank Calabrese

64 Mr Bill Russell

65 Australian Communication Exchange Ltd

66 Sub Committee of Nambucca Shire's Economic and Development Committee

67 Mr Chris Dalton and Mrs Ros Hill

67a Ms Ros Hill

67b Mr Chris Dalton

68 Deaf Telecommunication Access and Networking Project and Australian Association of the Deaf

69 RMIT University

70 Telecommunications and Disability Consumer Representation (TEDICORE)

71 Australian Consumers' Association

72 Mr David Boxall

73 Commuter Council of NSW

74 District Council of Karoonda East Murray

75 Communications Law Centre

76 Small Enterprise Telecommunications Centre Limited (SETEL)

77 E4Results

78 Mr G Pike

79 Councillor Ray Cloonan

80 Unwired Australia Pty Ltd

81 EMR Association of Australia

82 Great Southern Area Consultative Committee

83 Shire of Broomehill

84 Ms Elizabeth Elenius

85 Riverina Regional Development Board

86 Communications Experts Group Pty Ltd and Community Tele-Services Australia Inc

86a Communications Experts Group Pty Ltd and Community Tele-Services Australia Inc

87 Online Access Centre Association of Tasmania Inc

88 Consumers' Telecommunications Network (CTN)

89 Australian Telecommunications Users Group (ATUG)

90 Vodafone Australia

91 Optus

91a Optus

92 Shire of Chapman Valley

93 The Hon Duncan Kerr MP

94	Mr Brian Ready
95	Banana Shire Council
96	Communications, Electrical and Plumbing Union
97	Physical Disability Council of Australia
98	Queensland Government
98a	Queensland Government
99	Local Government Association of SA
100	Mr Frank Hays
101	Ms Susie Gardner - Brown
102	M.J. & F.M. Schaefer
103	Dr Graham Woods
104	Illawarra Business Chamber's Southern IT Network
105	Comindico Pty Ltd
105a	Comindico Pty Ltd
106	Communications Electrical and Plumbing Union, NSW Telecommunications and Services Branch
106a	Communications Electrical Plumbing Union NSW Postal and Telecommunications Branch
107	Telstra Corporation Limited
107a	Telstra Corporation Limited
107b	Telstra Corporation Limited
107c	Telstra Corporation Limited
107d	Telstra Corporation Limited
107e	Telstra Corporation Limited
107f	Telstra Corporation Limited
107g	Telstra Corporation Limited
108	Mr Malcolm Cheyne

109 Mr Greg Hind

110 Mr Michael Orford

111 Mr Julian Leonard

112 Mr Michael Wardle

113 Mr Sean Tudor

114 Mr Alex Davidson

115 Ms Helen Langford

116 Advance Cairns

117 Mr Norton Chia

118 Mr Grahame Wilson

118a Ms Vicki Brooke and Grahame Wilson

119 Mr Barry Taylor

120 McInnes Group

121 Mr Anthony Burow

122 Mr Brad Drury

123 Mr Christian Petersons

124 Confidential

125 Confidential

126 Townsville City Council

127 Helen Rix Graphic Design

128 Mr Ken Dawber

129 Townsville Catholic Education Office

130 NTL Telecommunications Pty Ltd

131 Neighborhood Cable

132 Norlink Communications Ltd

133 CEPU, Tasmanian Communications Branches

133a CEPU, Tasmanian Communications Branch

134 Miltech Services Pty Ltd and Distributed Systems Tech Centre Pty Ltd

135 Mr Geoffrey Sherrington

136 Agile Pty Ltd

137 Mrs Janos Foulkes Taylor

138 Dr Sorin Adrian Barbulescu
Institute for Telecommunications Research, University of South Australia

139 Communications, Electrical Plumbing Union Queensland Branch

140 Ms Michelle O'Byrne, Electoral Division of Bass

141 Rockhampton City Council

142 Australian Provincial Newspapers Pty Ltd

143 NUFER and Associates

144 Warren-Blackwood Economic Alliance

145 South West Development Commission

146 Telecommunications Industry Ombudsman

147 Bendigo Bank Group

148 Communications Electrical Plumbing Union

149 Ms Gillian Argentino

150 Paul Budde Communications Pty Ltd

Appendix 2

Witnesses at public hearings

11 October 2002, Wollongong

Union Branch, Communications Electrical and Plumbing Union

Mr Steve Dodd, Union Organiser

University of Wollongong

Mr David Fuller, University Developments Officer

Mr Neil Cairns, Associate Librarian, Technology Communications

Ms Jennie George, Federal Member for Throsby

M & M Ceramics Pty Ltd

Mrs Brenda Lenhart, Director

Illawarra Business Chamber; and Chair, Southern IT Network

Mr Tim Jabez Lewis, Director

New South Wales Telecommunications and Services Branch, Communications Electrical and Plumbing Union

Mr Ian McCarthy, Secretary

Southern Phone Company

Mr Roderick John Oxley, Director

Mr Philip James Herrick, Acting General Manager, Company Secretary, Public Officer and Director

Mr William George Hilzinger, Chairman

26 November 2002, Melbourne

Council on the Ageing (WA)

Mr Nigel Barker, Executive Director,

Telecommunications and Services Branch (South Australia/Northern Territory), Communications, Electrical and Plumbing Union

Mr Gerry Anthony Kandelaars, Branch Secretary

Ms Rosalind Eason, Senior National Industrial Research Officer

Mr Colin Phillip Cooper, National Vice-President

RMIT University

Mr John Murphy

Council on the Ageing (Australia)

Ms Helen Scott, Information Manager

27 November 2002, Canberra

Small Enterprise Telecommunications Centre Ltd

Mr Ewan Dallas Brown, Executive Director

Comindico Pty Ltd

Mr David Forman, Director, Corporate Affairs and Regulatory

Dr Terrence Austin Cutler, Adviser to Board

Australian Communications Authority

Dr Bob Horton, Deputy Chairman

Mr John Haydon, Acting Senior Executive Manager Telecommunications

National Office for the Information Economy

Ms Anne-Marie Lansdown, General Manager

Mr Douglas Ross Kelso, Policy Officer

Mr Patrick Callioni, Chief General Manager, Strategy and Programs

Unwired Australia Pty Ltd

Mr Peter Leonard Shore, Chief Executive Officer

Mr Ian Davis Hayne, Consultant, Regulatory Affairs

28 November 2002, Sydney

New South Wales Postal and Telecommunications Branch, Communications, Electrical, Electronic, Energy, Information, Postal, Plumbing and Allied Services Union of Australia

Mr Lawrence Douglas Chalker, Branch President

Mr Lyle Frederick Brittain, Organiser

Mr James Craig Metcher, Branch Secretary

Australian Consumers Association

Mr Charles Crawford Britton, Senior Policy Officer, IT and Communications

Australian Communication Exchange Ltd

Mr Leonard Brian Bytheway, Chief Executive Officer

Consumers Telecommunications Network

Ms Teresa Margaret Corbin, Acting Executive Officer

NTL Telecommunications Pty Ltd

Mr David William Green, Managing Director

Australian Communications Industry Forum

Ms Johanna Joyce Plante, Chief Executive Officer

Deafness Forum of Australia

Ms Margaret Frances Robertson, Chairperson

Mr Andrew Stewart, Telecommunications Representative

Australian Telecommunications Users Group

Mrs Rosemary Sinclair, Managing Director

6 December 2002, Canberra

SingTel Optus Pty Ltd

Ms Judy Anderson, Manager, Regulatory Strategy

Mr David McCulloch, General Manager, Government Affairs

National Farmers Federation

Mr Mark Needham, Policy Manager, Telecommunications

Telstra CountryWide, Telstra

Mr Lawrence Paratz, Regional Managing Director, Southern Region

Telstra

Dr Paul Robert Paterson, Director, Regulatory

Dr Tony Warren, Group Manager, Regulatory Strategy

28 March 2003, Canberra

Ms Ros Hill (Private capacity)

Department of Corporate and Information Services, Northern Territory Government

Mr Les Hodgson, Executive Director Information and Communications Technology Division

Vodafone

Mr Brian Patrick McDonnell, Policy Analyst

Ms Georgia-Kate Schubert, Manager, Government Affairs

Telecommunications Industry Ombudsman Ltd

Mr John Edward Pinnock, Ombudsman

22 April 2003, Ballarat

Neighborhood Cable Pty Ltd

Mr Fred Grossman, Chief Operating Officer

Mrs Sari Baird, Legal Counsel/Company Secretary

Mr Jeff Feldman, Commercial Manager

Bendigo Community Telco Ltd

Mr Andrew James Cairns, Chief Executive Officer

23 April 2003, Mildura

In-House Integrated Systems Support Pty Ltd

Mr Cosimo Ilario Cirillo, Director/Network Engineer

Mildura Rural City Council

Mr David Clarke, Director Business Services

Mr Philip Pearce, Chief Executive Officer

Mr Peter Vale, Manager Information Technology and Telecommunications

Ouyen Incorporated

Mr Robert John Jardine, Secretary/Treasurer,

24 April 2003, Launceston

Hon. Dick Adams, Federal Member for Lyons

Mr Paul John Bullock (Private capacity)

Launceston City Council

Mr Robert George Campbell, General Manager

Tasmanian IT Industry Council

Mr Steven John Jessup, Chairman

Nunamara Progress Association

Mr David Jones, Owner

Kabuki by the Sea

Mr Terence John Lanning, Director

Communications, Electrical and Plumbing Union

Mr Peter McCambridge Miller, State Secretary

Ms Michelle Anne Obyrne, Federal Member for Bass

Broadband eLab, Telstra Corporation

Mr Tony Peter Oetterli, Manager

Call Centre Consultant, Regent Recruitment

Mrs Catherine Teresa Park,

Mr Christopher Ian Schier, (Private capacity)

Mr Graeme Sturges, Past State Secretary, Communications Division, Postal and Telecommunications Branch, Communications, Electrical and Plumbing Union, and Member for Denison, Parliament of Tasmania

28 April, Cairns

Townsville Catholic Education Office

Ms Lee-Ann Barton, Information Communication Technology Curriculum Officer

Townsville City Council

Councillor Ray Cloonan, Councillor

Postal and Telecommunications Branch, Communications, Electrical and Plumbing Union

Mr Garry John Rogers, Industrial Officer

Mr Paul White, Branch Secretary

Gulf Savannah Development

Ms Kathryn Ann Sutcliffe, Chief Executive Officer

James Cook University

Professor Eric Wainwright, Pro-Vice-Chancellor, Information Services and Technologies

Advance Cairns

Mr Sandy Whyte, Board Observer

29 April 2003, Rockhampton

Rockhampton City Council

Mr John Nevil (Rick) Ralmer, Critical Projects Officer

Mr Thomas John Upton, Director, Community and Cultural Development

Purely Electronics Pty Ltd

Mr Cyril Patrick Reeves, Managing Director

Australian Provincial Newspapers Pty Ltd

Mr David Slyderink, Northern Region IT Manager

30 April 2003, Caboolture

Telecommunications and Disability Consumer Representation

Ms Gunela Astbrink, Policy Adviser

Norlink Communications Ltd

Mr Keith Charles Davidson, Chief Executive Officer

Mr Brian Keith Stevens, Technical Director

Physical Disability Council of Australia Ltd

Ms Susan Wendy Egan, Executive Officer

Mr Harold Hartfield, Secretary

The Hon. Paul Lucas, Minister for Innovation and Information Economy, Queensland Government

Nufer and Associates

Mr Kerry Douglas Nufer, Principal Engineer

Queensland Department of Innovation and Information Economy

Mr John Spinaze, Director, Infrastructure Development

8 May 2003, Adelaide

Mr Robert Gunson Ardill (Private capacity)

University of South Australia

Dr Sorin Adrian Barbulescu, Institute for Telecommunications Research

South Australian Farmers Federation

Mr Adam Gray, Executive Officer, Agribusiness and Community Services

Mr Richard John Way, Chair, Community Services Committee

Agile Communications

Mr Simon Walter Hackett, Managing Director

Mid Murray Council

Mr Ian Robertson Mann, Mayor

Mr Steven Paul Wilkinson, Accountant

9 May 2003, Bunbury

South West Development Commission

Mr Ashley Stephen Clements, Project Officer, Infrastructure

Mr Don Punch, Chief Executive Officer

Dr Ken Robinson, Board Member, and Chair, South West Online Infrastructure Working Group

Communications Experts Group Pty Ltd

Dr Walter Battman Green, Director

Department of Local Government and Regional Development

Mr Mark Hainsworth, Senior Policy Officer, Policy Unit, Strategy and Legislation

Warren-Blackwood Economic Alliance

Ms Anita Iuretigh, Executive Officer

Mr Anthony James Woods, Chair

Communications, Electrical and Plumbing Union

Mr Paul William Kelly, State Secretary, Communications Division

Isolated Children's Parents Association of WA Inc

Mrs Roxanne Mary Morrissey, State President

Telstra Country Wide (Southern Western Australia)

Mr Raymond Keith Philp, Area General Manager

Great Southern Development Commission

Mr Mark Pitts-Hill, Senior Development Officer

Department of Industry and Resources

Mr Daniel Scherr, Acting Principal Policy Officer

Mrs Sheryl Anne Siekierka, Principal Policy Officer, Telecommunications,

Community Teleservices Australia Inc.

Ms Gail Laraine Short, Executive Officer

14 May 2003, Canberra

Telecommunications Industry Ombudsman Scheme

Mr John Pinnock, Ombudsman

19 May 2003, Sydney

Communications, Electrical and Plumbing Union, Communications Division

Mr Anthony Absolom, National Industrial Research Officer

Mr Brian Keith Baulk, Divisional Secretary, Communications Division, Mr Colin Cooper, Divisional President

Ms Rosalind Eason, Senior National Industrial Research Officer

Mr Shane David Murphy, New South Wales Branch Organiser

Mr Christopher John Dalton (Private capacity)

Mr Malcolm Ian Scholes Moore(Private capacity

Telstra

Mr Anthony Rix, Executive General Manager, Service Advantage

Mr Bill Scales, Group Managing Director, Regulatory, Corporate and Human Relations

Communications Law Centre

Dr Derek Wilding, Director

20 May 2003, Newcastle

Ms Vicki Brooke (Private capacity)

Mid-West Development Commission

Mrs Jano Foulkes-Taylor, Community Member

Midac Technologies (Australia) Pty Ltd

Mr Kevin Johnson-Bade, Managing Director

Mr Grahame Wilson (Private capacity)

6 August 2003, Melbourne

Telstra

Mr Bill Scales, Group Managing Director, Regulatory, Corporate and Human Relations

Dr Hugh Simon Bradlow, Chief Technology Officer

Mr Denis Mullane, Manager, BigPond Network Capability

Ms Margaret Portelli, Group Manager, Consumer Affairs

Mr Anthony Rix, Head of Service Advantage

Telstra Country Wide

Mr Don Pinel, Regional Managing Director, Queensland

7 August 2003, Melbourne

Telstra

Mr Denis Mullane, Manager, BigPond Network Capability

Mr Anthony Rix, Head, Service Advantage

Mr Bill Scales, Group Managing Director, Regulatory Corporate and Human Relations

Telstra Country Wide

Mr Don Pinel, Regional Managing Director, Queensland

Appendix 3

Inspections

15 August 2002

Telstra's Global Operations Centre, Clayton, Victoria

28 April 2003

Telstra roadside telecommunications installation, Cairns, Queensland

29 April 2003

COIN (Community Informatics Internet Academy), Rockhampton, Queensland

30 April 2003

Telstra's Customer Access Network Electronic Management Centre, Mayne, Brisbane, Queensland

20 May 2003

Telstra Service Advantage, Newcastle, New South Wales

Appendix 4

Exhibits

26 November 2002 - Melbourne

Council on the Ageing (Australia)

- *Seniors in Cyberspace: Older People and Information*. Published in *Strategic Ageing, Australian Issues in Ageing,* Vol 8/99, September 1999.
- Clipping from *The Australian* dated 29 August 2000 headed *Catching the silver wave*
- Clipping from *The Australian* dated 5 June 2001 headed *Net access debate 'too regionally focused'.*
- Webpage from the Council on the Ageing (Australia) entitled *Bibliography on older people and ICT.*

Mr John Murphy, RMIT University

- slide entitled *Infrastructure Replication and Efficiency,* slide no.13 from a presentation entitled Telecommunications Regulation and Infrastructure, by Mr John Murphy, Circit Research Associate.

28 November 2002 - Sydney

Communications, Electrical, Electronic, Energy, Information, Postal, Plumbing and Allied Services Union of Australia, New South Wales Postal and Telecommunications Branch

- *Identified Faulty Leaks Cable Replacements for NSW*;
- *Lowest Traducer Alarm Pressure Statistics*;
- *Cylinder Usage Information*; and
- *Accessible Leaks Information*.

[Note: These documents were initially accepted on an in camera basis. The Committee subsequently resolved to publish them with certain deletions].

6 December 2002 – Canberra

Senator Sue Mackay

- Chart entitled: *National & Regional Outstanding CNI Snapshot (Weekly*)
- Chart showing breakdown of statistics in the first chart on a category 1 to category 5 basis.

24 April 2003 - Launceston

Tasmanian IT Industry Council.

- Tasmanian Information Technology Industry Development Plan: Strategy, July 2000
- Information Technology Industry Council, Implementation Plan, June 2002
- Newspaper clipping from *The Examiner* of 30 October 2002 entitled *North East of State seen as worst area*.

Launceston City Council

Pamphlet entitled *Launceston City Council Strategic Plan 1999-2003*.

Mr Terrence Lanning

- a brochure on 'Kabuki by the sea'.
- newspaper clippings as follows:
- *Restaurant counts cost as phones out for five days*, Hobart Mercury, 18 May 1999
- *Repair wait is costly,* annotated as 25 May 1999
- *Six days without phone,* annotated as 18 May 1999
- *Union boss has a blast for Telstra,* annotated as 19 May 1999
- *Full Telstra sale now under threat,* annotated as 9 May 1999
- *Broken phone line chokes restaurant*, The Examiner, 12 June 2002
- *Digging cuts off Kabuki,* The Mercury, 13 June 2002
- *Tourism operator blasts Telstra,* The Mercury, 12 June 2002
- *Restaurant is back on line,* The Examiner, 14 June 2002

Mr David Jones

'Presentation papers' on a request for funding of mobile phone coverage along the Tasman Highway.

28 April 2003 - Cairns

Cairns Chamber of Commerce

The Cairns Report – 2002 in Review by the Cairns Chamber of Commerce

Professor Eric Wainwright, Pro-Vice-Chancellor, Information Services and Technologies, James Cook University

Hard copy versions of four slides:

- Current JCU Situation;
- JCU/Regional Requirements

- Issues in Cairns/Townsville
- General Issues

Communications, Electrical and Plumbing Union, Postal and Telecommunications Branch

A length of telephone cable.

29 April 2003 – Rockhampton

Rockhampton City Council

- *Library Technology – COIN*, a publication of the Rockhampton City Council;
- Chapter 4 of the Rockhampton Library Review 2000 (Draft) entitled *Technology.*

30 April 2003 – Caboolture

Telecommunications and Disability Consumer Representation/Physical Disability Council of Australia Ltd

- *Best practice in telecommunications for people with a disability in Australia,* by TEDICORE, March 2002
- *Telephones – What features do disabled people need*?, by John Gill and Tony Shipley, PhoneAbility, London
- *Telecommunications Journal of Australia*, Vol 52, No. 4, Summer 2002
- *Bridging the Gap? Access to telecommunications for all people*, edited by Patrick R.W. Roe, Swiss Federal Institute of Technology of Lausanne Laboratory of Electromagnetism and Acoustics, published by the Commission of European Communities, November 2001.

Nufer and Associates

- *Qe-Meat Stage 1 Report Part 1 Implementing e-business solutions across the beef supply chain, Executive Report*

- *Qe-Meat Stage 1 Report Part 2 Implementing e-business solutions across the beef supply chain, Infrastructure Audit Report*

Queensland Government

- Report entitled *Community Concerns on Telecommunications Issues in Western Qld following Listening Trip by Minister Paul Lucas, 11-13 December 2002.*
- 4 maps showing Telstra CDMA mobile coverage in Queensland, NSW and Victoria and combined for Queensland, NSW and Victoria.

8 May 2003 – Adelaide

Mid Murray Council

Mid Murray Council *Strategic Plan 2002-2005*, dated February 2002.

9 May 2003 – Bunbury

Government of Western Australia

- Information Pack: Western Australian Telecentre Program
- Pamphlet: *Telecentre network, bringing communities together*
- Brochure: WA Telecentre Network *Strategic Plan2002-2005*
- Report by Mr Alan Shepherdson of Telstra Country Wide entitled *12 month Report for Internet Adviser Position: A Pilbara Development Commission and Telstra Country Wide Initiative* and Supplementary Information to Report
- Questionnaires used in the State Government's Telecommunications Needs Assessment telephone survey of homes and businesses
- Information from the Western Australian Department of Education and Training on *Western Australian Schools of the Air*.

South West Development Commission

- *Profile – South West Region of Western Australia*
- *South West Economic Perspective: An update on the economy of Western Australia's South West Region*, July 2001, prepared in conjunction with the Department of Local Government and Regional Development
- *Connecting the South West: The South West Telecommunications Infrastructure and Opportunity Study,* published in conjunction with the Government of Western Australia, 2003
- report by Gibson Quai Pty Ltd prepared for the South West Development Commission entitled *Telecommunications Infrastructure and Opportunity Study Executive Summary,* February 2003.

Communications Electrical and Plumbing Union of Western Australia Communications Division

- Letter from Tessa Jakszewicz, General Manager, Telstra – Metro Services, South West Region, to Mr Paul Kelly, Branch Secretary, Communications Electrical and Plumbing Union, Perth, dated 8 April 2003;
- Article entitled *Teamwork builds lightning reflexes,* source not shown; and
- Telstra document entitled *Complaint Root Cause Report – Sept & Dec Qtr 2003*

Community Teleservices Australia Inc/Communications Experts Group Pty Ltd.

Charts depicting Australia's communications linkages, and comparative data of leased line prices and leased line 2Mbit/s costs for selected OECD countries.

19 May 2003 – Sydney

Communications Electrical and Plumbing Union Communications Division

- Facsimile from John Brown, Communication Workers' Union to Tony Absolom dated 15.5.03 forwarding 7 pages as follows:
  (i) Summary @ 14/05/2003
  (ii) Resourcing Strategies @ 14/05/2003 – Sydney Workload
  (iii) Canberra Workload: Normal
  (iv) Resourcing Strategies @ 14/05/2003 – Brisbane Workload
  (v) Resourcing Strategies @ 14/05/2003 – Melbourne Region Workload
  (vi) Resourcing Strategies @ 14/05/2003 – Adelaide Workload
  (vii) Resourcing Strategies @ 14/05/2003 – Perth Workload

- Email from Hans Jakobi, Australia's Wealth Coach to Shane Murphy dated 16 May 2003 headed *Telstra's proposed job cuts in Central West NSW*
- Photocopy: 2-page schedule headed *Jointing and Dit*..(details absent from photocopy).
- Photocopy: 1-page schedule headed *Gel joints for replacement.*

7 August 2003 – Melbourne

Telstra Corporation

- Brochure: *Telstra Products and Services – A catalogue for older people and people with a disability*, with insertions of a flyer about the brochure, a Questionnaire directed at users of the brochure, and a flyer updating the brochure in relation to the availability of Braille and Large Visual Display TTYs;
- Pamphlet: *Telstra Disability Equipment Program – Making communication accessible;* and
- *Presentation to the Senate Inquiry into the Australian Telecommunications Network* (copies of 19 slides shown to the Committee by powerpoint display by Mr Hugh Bradlow, Telstra's Chief Technology Officer)

Appendix 5

Regulatory framework

This Appendix outlines some of the major features of the Australian telecommunications regulatory regime, substantially introduced by the Commonwealth Government on 1 July 1997. The Committee addresses below those key elements of the regime that relate to telecommunications infrastructure, the main thrust of its inquiry.

Regulatory agencies

Role of the Minister

The Minister for Communications, Information Technology and the Arts has a range of powers under the telecommunications regulatory regime. The Minister, for example, has the power to:

- determine that certain telecommunications facilities supplying carriage services to the public be considered network units (s.29 Telecommunications Act);
- impose licence conditions on individual carriers, classes of carriers or all carriers (s.63 Telecommunications Act);
- give directions to the ACA in relation to its functions and the exercise of its powers;
- can direct the ACCC to undertake a public inquiry in relation to anti-competitive conduct under Part XIB of the Trade Practices Act or the declaration of services under Part XIC of that Act (s.496 Telecommunications Act);
- may determine price-related terms and conditions in relation to declared access services (s.152CH, Part XIC, Trade Practices Act);
- determine pricing principles to give guidance to the industry. The preferred approach is to rely, as far as possible, on the broader regulatory regime and ongoing guidance from the ACCC;
- give ministerial directions to Telstra under s.9 of the Telstra Corporation Act 1991; and
- give directions to carriers in relation to service standards and consumer safeguards Under the Telecommunications (Consumer Protection & Services Standards) Act 1999.

Notwithstanding its majority ownership of Telstra the Government does not have any control of the day-to-day operations of Telstra which are the responsibility of the board and management of that company.

Australian Consumer and Competition Commission

The 1997 reforms inserted into the *Trade Practices Act 1974* specific provisions to deal with anti-competitive conduct in relation to telecommunications and to establish an access regime to give competitors access to key infrastructure and services. Responsibility for administering these competition provisions was vested with the Australian Competition and Consumer Commission (ACCC), Australia's national competition regulator.

The ACCC's powers to regulate anti-competitive conduct include the collection of information to monitor competition in the telecommunications industry. To ensure that competitors understand its intentions, the ACCC has developed guidelines that it will use in exercising its powers to deal with anti-competitive conduct. The ACCC reports annually on competitive safeguards within the telecommunications industry.

A basic requirement of any national telecommunications network is that users of the network enjoy 'any-to-any connectivity' between the parts of the network operated by different carriers and service providers. Satisfying this basic requirement necessitates ensuring that those owning and controlling key elements of the network are required to provide interconnection with their competitors' facilities on reasonable terms.

The ACCC has the power to 'declare' services for the purposes of the telecommunications-specific access regime under the Trade Practices Act. Once a service has been 'declared' it is in effect brought within the regulatory net. Carriers and carriage service providers of declared services are generally required to provide interconnection with, and access to those services for, any requesting access seeker on reasonable terms and conditions. Where commercial negotiations fail to establish agreed terms and conditions for access the ACCC may set terms and conditions through arbitration.

Services are declared only after the ACCC has conducted a public inquiry, or on the recommendation of the Telecommunications Access Forum (TAF) subject to the ACCC being satisfied there has been sufficient consultation with potential access seekers and consumer representatives. Infrastructure owners of services that are not declared are under no obligation to provide access to access seekers.

Telecommunications Access Forum

The legislation provides for a Telecommunications Access Forum (TAF). It is a non-government industry body in which all carriers and carriage service providers may participate. The role of the TAF is to recommend to the ACCC that certain services should be declared and to develop a Telecommunications Access Code that sets out model terms and conditions for use in voluntary access undertakings. The ACCC has designated the Australian Communications Access Forum Inc (ACAF) to be the TAF. The access Code was approved in January 1998.

Australian Communications Authority

The Australian Communications Authority (ACA) is responsible for administering a range of technical and service standard issues relating to telecommunications, as well as managing the radiofrequency spectrum. The ACA licenses telecommunications carriers and reports to the Minister for Communications, Information Technology and the Arts on the performance of carriers and service providers. The ACA works closely with the Australian Communications Industry Forum encouraging industry to develop voluntary codes of practice and technical standards where they are in the public interest and do not impose undue financial and administrative burdens on industry participants. Industry codes may be registered by the ACA, which then enables the ACA to require an industry participant to comply with the Code.

The ACA administers the universal service obligation (USO) and customer service guarantee (CSG), provisions of the Act. The ACA has the capacity to enhance service standard arrangements should self-regulation fail, including the ability to set mandatory customer service standards. The ACA also administers the national numbering plan.

The ACA represents Australia's communications interests abroad through participation in the work of international organisations, such as the International Telecommunication Union, for technical standardisation and coordination of services between countries.

Australian Communications Industry Forum

The Australian Communications Industry Forum (ACIF) was established in May 1997 as a peak industry body to facilitate and manage telecommunications self-regulation. ACIF's main role is to develop and administer industry technical and operating arrangements that promote both the long-term interests of end-users and the efficiency and international competitiveness of the Australian communications industry. Its primary functions include development of industry codes of practice for registration by the ACA and the timely production of technical standards, specifications, plans and guidelines that the industry and community need.

Customer Service Standard Protections

The Telecommunications Act 1997 and the Telecommunications (Consumer Protection & Services Standards) Act 1999 strengthened existing obligations and placed new obligations on the telecommunications industry with regard to service standards. These telecommunications specific safeguards are in addition to general safeguards conferred under the Trade Practices Act, general fair trading legislation and customer rights under contract law. The safeguards extend to a range of measures aimed at ensuring that customers are provided with a reasonable and reliable standard of service.

Three of the telecommunications specific safeguards relate to the reliability of the network; the Customer Service Guarantee, the Network Reliability Framework and

priority assistance. Other protections include the Telecommunications Industry Ombudsman scheme, the USO, the Internet Assistance Program, price controls on various Telstra services, the requirement for untimed local calls; access to emergency call services; caller number display; and itemised billing.

Customer Service Guarantee

The Customer Service Guarantee (CSG) is intended to protect residential and small business customers from poor telephone service. The CSG Standard specifies timeframes for the connection of specified services, the repair of faults and the attendance of appointments by service providers. Customers are entitled to compensation if these timeframes are not met.

The requirements for connection a service vary depending upon where the customer is located and the proximity to available infrastructure and capacity. Where there is no connection in place and the customer is close to available infrastructure and capacity the connection must be made within:

- 5 working days in an urban area;
- 10 working days in a major rural area; or
- 15 working days in a minor rural or remote area.

A fault which has been reported must be repaired by the end of the:

- next working day in urban areas and for some faults in rural and remote areas;
- second working day in rural areas; and
- third working day in remote areas.

Phone companies are not required to meet CSG timeframes if natural disasters or extreme weather conditions cause mass disruptions of services, or where a phone company makes a reasonable offer of an interim or alternative service.

A Fact Sheet prepared by the ACA on the Customer Service Guarantee can be accessed through its web site at http://www.aca.gov.au

Priority Assistance

In February 2002 Sam Boulding, a child living in north-eastern Victoria, suffered a severe asthma attack and died. During this emergency his family were unable to call for assistance using either of the telephone services provided to the family home because of the latest of a series of faults on those services. Although the inquest subsequently found that there was no evidence that a reliable telephone service would have altered the outcome, this incident raised considerable public concern about the reliability of telephone services and Telstra's fault management system. As a result Telstra revised its procedures and the Government took action to ensure that priority was given to the needs of customers who are affected by life-threatening medical conditions.

Under a carrier licence condition introduced by the Government, Telstra is required to develop and maintain an effective priority assistance service. As the primary universal service provider, Telstra is also required to make priority assistance available to all eligible customers on request. Priority assistance is available to customers where a member of the household:

- has a diagnosed life-threatening medical condition; and
- there is a high risk that the condition could rapidly deteriorate to be life-threatening ;and
- access to a telephone would assist to remedy the life-threatening situation.

Telstra is required to ensure that a priority customer is given the highest level of service that is available. This includes:

- a 24-hour maximum timeframe for service connection and fault repair in metropolitan and rural areas and a 48-hour timeframe in remote areas;
- an interim service if a priority service cannot be connected or repaired within these timeframes;
- an enhanced fault repair service for recurring and multiple faults; and
- specialised credit management processes to ensure that the customer always has access to the emergency call service and Telstra customer service.

Network Reliability Framework

The Network Reliability Framework (NRF) commenced in January 2003. The NRF requires Telstra to maintain minimum levels of network reliability. Under the NRF a telephone service cannot experience more than three faults in 60 days or more than 4 faults in a year. Telstra is legally required to report regularly to the industry regulator, the Australian Communications Authority (ACA), on faults on its network at a number of levels, ranging from region based reports to reports on individual phone services. Where reasonable fault levels are exceeded Telstra is required to investigate and, where appropriate, take remedial action. The ACA monitors remedial action taken at an individual level and may issue directions requiring Telstra to undertake remedial action at a regional level.

In evidence to the Committee Telstra stated that since the commencement of the NRF it had maintained an average service availability of greater than 99 per cent across all service measures.[1]

Universal Service Obligation

In remote and sparsely populated areas of Australia the provision of telephone services may not be commercially viable, because the costs of supplying the service

1 Bill Scales, Group Managing Director, Regulatory Corpoartte and human Relations, Telstra, Committee Hansard, 6 August 2003.

may exceed the revenues earned from supplying the service at similar prices to those charged in urban areas. The Universal Service Obligation (USO) is intended to ensure that standard telephone services, payphones and prescribed carriage services are reasonably accessible to all Australians on an equitable basis, wherever they reside or carry on business.

The Universal Service Obligation (USO) is enshrined in Part 2 of the *Telecommunications (Consumer Protection and Service Standards) Act 1999*. It requires that services be provided by the Universal Service Provider, currently Telstra, who is then compensated through the Universal Service Levy which is imposed on all carriers. Telstra is required to supply a telephone service to places of residence and businesses upon request. The service is subject to normal commercial charges and to Government price caps where these apply. The obligation includes the provision of a suitable handset where requested by the customer and comparable services must also be provided for people with disabilities.

Part 3 of the Act extends this type of protection to the provision of data services under the Digital Data Service Obligation (DDSO). The DDSO requires Telstra to provide access to a digital data service equivalent to 64 kbps to 96% of the Australian population. This requirement is normally satisfied through the provision of ISDN services.

The needs of the remaining 4% of the population are met through the Special Digital Data Service Obligation (SDDSO). This requires a designated provider to supply customers who cannot receive ISDN with access to an approximately equivalent service, normally via a one-way satellite service. A subsidy is available to help the subscriber meet the cost of equipment and installation. Telstra and Hotkey are the Special DDSO providers.

Internet Assistance Program

The Internet Assistance Program (IAP) was established following the Telecommunications Services Inquiry. That inquiry found that a small but significant number of customers, particularly in rural and remote areas, were either unable to access the internet or experienced slow speeds. The Program was established as a three year joint initiative between the Commonwealth Government and Telstra which commenced on 2 July 2001.

The IAP was intended to help Internet users obtain a reasonable speed from their dial-up Internet service. The program is primarily aimed at helping Internet users obtain an equivalent data speed of 19.2 kbps and offers dial-up users access to a free online help and technical support service.

Telecommunications Industry Ombudsman

The Telecommunications Industry Ombudsman (TIO) provides a free, independent investigation service for residential and small business customers who have been unable to resolve certain complaints directly with their telecommunications carrier, service provider or Internet service provider

Appendix 6

Summary of related inquiries

Telecommunications Services Inquiry

The then Minister for Communications, Information Technology and the Arts, Senator the Hon Richard Alston, established the Telecommunications Service Inquiry (TSI) in March 2000 to assess the adequacy of telecommunications services in Australia. The TSI was chaired by Mr M.A. (Tim) Besley, with Ms Jane Bennett and Mr Ray Braithwaite as its other members.

The TSI reported to the Minister on 30 September 2000. In its report entitled *Connecting Australia* the Inquiry presented a number of observations on the adequacy of the telecommunications network. In its Executive Summary it wrote that:

> There is … very strong growth in the expectations of Australians generally regarding the services they should receive from the telecommunications industry. A large portion of Australians now expect not only a reliable telephone service, but access to the Internet at reasonable speeds as well as mobile phone services. Many also seek the benefits of more advanced services, some of which are not yet available in the mass market either here or overseas. Those expectations continue to be fuelled both by governments, through their statements of policy vision for the information economy, and the industry, through its marketing efforts.
>
> …
>
> Of particular note is the greater degree of concern expressed by rural and remote Australians about services levels compared with those in metropolitan areas. Approximately 30 per cent of all submissions received by the inquiry were from the six per cent of Australians who live in the least accessible parts of this country.[1]

The Inquiry's key certification was in the following terms:

> The Inquiry has concluded that Australians generally have adequate access to a range of high quality, basic and advanced telecommunication services comparable to the leading information economies of the world. The inquiry research indicates Australians who live in metropolitan and regional centres enjoy good telecommunications services and are generally satisfied with them. However, a significant proportion of those who live and work in rural and remote Australia have concerns regarding key aspects of services which, at this stage, are not adequate. Their concerns relate primarily to

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1 Telecommunications Service Inquiry, *Connecting Australia*, 30 September 2000, p 1.

- the timely installation, repair and reliability of basic telephone services;
- mobile phone coverage at affordable prices; and
- reliable access to the Internet and data speeds generally.
- The Inquiry's analysis suggests 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.[2]

The report contained 17 recommendations aimed at providing a framework to address identified areas of concern and ensuring continued improvement in services. A copy of the report and the Governments response can be access through the web site of the Department of Communications, Information Technology and Arts at http://www.dcita.gov.au

Broadband Advisory Group

Background

In March 2002, the Federal Government established a Broadband Advisory Group (BAG) to provide high-level advice on the development of the broadband market in Australia and to conduct a strategic review of broadband policy with a view to stimulating the availability and take-up of broadband. The BAG was asked to provide advice on:

- appropriate ways to measure broadband take-up and success;
- current impediments to, and likely drivers of, broadband take-up, particularly in key productivity sectors such as small business, education, health and community services;
- possible policy solutions to current and emerging challenges on both the supply-side and demand-side of the broadband issue;
- market based strategies for raising broadband awareness, particularly in key productivity sectors;
- strategies to encourage the development of marketable applications that will facilitate broadband take-up in key productivity sectors;
- emerging technologies and new business models for delivering broadband services, as requested; and

2 Telecommunications Service Inquiry, *Connecting Australia*, 30 September 2000, p 5.

- issues that are likely to emerge as the Australian broadband market develops.

In providing this advice, the BAG was asked to have regard to current Australian Competition and Consumer Commission (ACCC) activities in relation to the development of a competitive broadband market in Australia.

The Broadband Advisory Group was chaired by the Commonwealth Minister for Communications, Information Technology and the Arts. Members of the Group were: Bronte Adams (Dandolo Partners), Ros Hill (Telehealth Tasmania Network Project), Tom Kennedy (Beyond Online), George McLaughlin (Australian Academic Research Network), Mike Miller (MNet Corporation), Rosemary Sinclair (Australian Telecommunications Users Group), Phil Singleton (Service Providers Industry Association), Ziggy Switkowski (Telstra Corporation), Jeffrey Tobias and Terry Walsh (Cisco Systems' Australia/New Zealand). The members of the group were also assisted by a group of eight global advisers from the USA, UK, France, Canada and Sweden.

The BAG reported to the Government in January 2003 in a report entitled *Australia's Broadband Connectivity*. The focus of its report was primarily on sectors such as education, health, government services and, more generally, across rural and regional Australia. It made 19 recommendations to the Government. It recommended that the Government should adopt the following national vision for broadband:

> Australia will be a world leader in the availability and 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]

The other recommendations of the BAG included:

- Australia should adopt the goal of broadband being available to all Australians at fair and reasonable prices;
- the Government should adopt a National Broadband Strategy;
- the Government should establish a National Broadband Strategy Implementation Group;
- the Government should consider initiatives to develop services that may not be commercially viable but which could potentially deliver significant economic, security and social benefits. These should predominately focus on rural and regional Australia;

3 Broadband Advisory Group, *Australia's Broadband Connectivity*, January 2003, p 15.

- all tiers of government should co-operate to develop demand aggregation strategies;
- all schools and educational institutions should be connected to broadband internet services;
- the Government should give high priority to stimulating the digital content industries in Australia; and
- the Government should require the ACCC to monitor and report on progress in ensuring an open, competitive and interoperable broadband market.

A copy of the report and the Governments response can be access through the web site of the Department of Communications, Information Technology and Arts at http://www.dcita.gov.au

Wireless Broadband Inquiry

On 15 April 2002 the House of Representatives Standing Committee on Communications, Information Technology and the Arts accepted a reference from the then Minister for Communications, Information Technology and the Arts (Senator the Hon Richard Alston) for an inquiry into wireless broadband. The Committee was asked:

> To inquire and report on the current and potential use of wireless technologies to provide broadband communication services in Australia, including regional Australia, having particular regard to the following:
>
> • the current rollout of wireless broadband technologies in Australia and overseas including wireless LAN (using the 802.11 standard), 3G (eg UMTS, W-CDMA), Bluetooth, LMDS, MMDS, wireless local loop (WLL) and satellite;
>
> • the inter-relationship between the various types of wireless broadband technologies;
>
> • the benefits and limitations on the use of wireless broadband technologies compared with cable and copper based broadband delivery platforms;
>
> • the potential for wireless broadband technologies to provide a 'last mile' broadband solution, particularly in rural and regional areas, and to encourage the development and use of broadband content applications;
>
> • the effect of the telecommunications regulatory regime, including spectrum regulation, on the development and use of wireless broadband technologies, in particular the Radiocommunications Act (1992) the Telecommunications Act (1997), and Parts XIB and XIC of the Trade Practices Act:

> • whether Government should make any changes to the telecommunications regulatory regime to ensure that Australia extracts the maximum economic and social benefits from the use of wireless broadband technologies; and
>
> • likely future national and international trends in the development and use of wireless broadband technologies.

The Committee tabled its report in the House of Representatives on 11 November 2002. The Committee concluded that:

> No wireless broadband technology is able to handle the data rates of the best wire-line technologies but there are many situations where the latter cannot yet be used or is simply unavailable (such as in remote and regional areas, and even in some suburban metropolitan areas).[4]
>
> The Committee concludes that the solution to the 'last mile' service involves a mixture of technologies, both wire-line and wireless. Clearly, however, for regional and remote Australia where wire-line solutions are not economically viable in the short to medium term, the last mile problem could be addressed by a variety of wireless techniques.[5]

The Committee made 14 recommendations which dealt with:

- improving access to spectrum for wireless broadband applications;
- educating prospective wireless operators about the market and the regulatory environment;
- examining the regulatory environment to ensure that wireless ISPs have access to the Internet backbone; and
- facilitating wireless broadband access for the hearing impaired.

A copy of the report can be accessed on the House of Representatives web site at http://aph.gov.au/house/committee/cita/reports.htm

Connecting Regional Australia

On 16 August 2002 the Minister for Communications, Information Technology and the Arts, Senator Richard Alston, established the Regional Telecommunications Inquiry (RTI), to assess the adequacy of telecommunications services in regional, rural and remote Australia and to advise on a number of other policy issues. While Ms Jane Bennett and Mr Ray Braithwaite were re-appointed from the

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4 House of Representatives Standing Committee on Communications, Information Technology and the Arts, Connecting Australia! Wireless Broadband, November 2002, p xi.

5 House of Representatives Standing Committee on Communications, Information Technology and the Arts, Connecting Australia! Wireless Broadband, November 2002, p xi.

Telecommunications Service Inquiry as members, the RTI was chaired by Mr Dick Estens.

The Terms of Reference required the inquiry to consider and report on two key areas:

- a detailed assessment of the adequacy of telecommunications services to regional, rural and remote Australia. The inquiry paid particular attention to the TSI report's finding that key concerns related to rural and remote areas rather than regional centres, and that the service areas of concern were the connection, repair and reliability of basic telephone services, coverage of affordable mobile telephone services, and reliable access to the Internet; and

- advice on whether, and if so what, arrangements should be put in place to address policy concerns relating to:

    - the delivery of Internet services at 64kbps or better and wireless-based technologies in regional, rural and remote Australia;

    - current and future provision of legislated consumer safeguards including the Universal Service Obligation, the Customer Service Guarantee, untimed local calls and the Telecommunications Industry Ombudsman;

    - Telstra's commitment to a local presence in regional, rural and remote Australia; and

    - the means by which the Government can ensure that people in regional, rural and remote Australia can share reasonably equitably in the benefits of future advances in telecommunications services resulting from competition and new technologies.

The Inquiry received 606 submissions and met with 40 groups representing the interests of people in regional, rural and remote areas. It reported its findings and 39 recommendations to the Government in November 2002. The Inquiry found that the Government had responded comprehensively to the findings of the TSI report and that it was addressing community concerns raised in that report. In particular the Inquiry:

- assessed mobile services as adequate, taking into account current Government contracts with Telstra still being delivered. The Inquiry recommended continuation of the Government satellite phone subsidy scheme beyond current arrangements.

- found the Government's Internet Assistance Program was providing benefits to users of dial-up Internet services. The Inquiry recommended a licence condition be placed on Telstra ensuring all Australians are guaranteed dial-up Internet speeds, or equivalent throughput, over the Telstra fixed network of at least 19.2 kilobits per second.

- identified some pockets of poor performance in the fixed telephone network causing concern for rural customers. The Inquiry found that the Government's Network Reliability Framework can resolve these concerns and it recommended specific action the Government should take under the Framework to require Telstra to address these issues immediately.

The Inquiry found that there had been significant commercial service development over the previous two years, both by Telstra and other service providers. It made a number of recommendations to "lock-in" service improvements and Telstra commitments, to consolidate and complement progress achieved over the past two years, and to ensure that concerns expressed in submissions would be properly addressed. In particular, the Inquiry recommended that the Government should require Telstra to give a formal undertaking to upgrade its remaining radio concentrator (DRCS) systems, and to address the issue of poorly performing pair gain systems.

The Inquiry also recommended a number of new initiatives to enable Australians in regional, rural and remote areas to access the benefits of future technology. These included an incentive scheme to provide equitable access to high bandwidth services and a guaranteed review process to look at the need for service improvements in regional Australia into the future. The Report proposed that these reviews should be supported by a regional strategic telecommunications plan and ongoing Government funding support. The RTI concluded that:

> The Inquiry is confident that arrangements that have been put in place over the past five years (including the TSI response), together with commercial developments, and the Inquiry's further recommendations, will create an environment into the future where regional, rural and remote Australians will be able to benefit fully from advances in telecommunications technology and services.[6]

Government response

The Government responded to the RTI report in June 2003. The Government accepted all of its 39 recommendations and announced that it would invest $181 million in a comprehensive response to those recommendations.

The Government indicated that it would obtain a formal undertaking from Telstra in relation to the completion of the upgrade of its older radio concentrator systems in a publicly available timetable. This will provide an enhanced array of phone and internet services for the small proportion of regional Australians whose systems have not been upgraded and did not have access to a subsidised two-way satellite service under the Government's $150 million Extended Zones tender.

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6 *Connecting Regional Australia*, p xii.

The report noted that pair gain and other similar systems were installed for voice telephony purposes but can be deficient for the provision of advanced voice services, dial-up internet speeds and access to broadband. The Government stated that it would obtain a formal undertaking from Telstra on how it will improve as soon as possible the quality of phone services affected by pair gain systems. Telstra will also provide an undertaking on how it is addressing dial-up data speed issues on these systems. Telstra's formal undertakings will include timeframes, and will be monitored and reported on publicly by the Australian Communications Authority (ACA).

The Government will also provide an additional $10.1 million over four years for information technology training and support services in rural and remote areas, building on the significant funding already provided for these services under the Networking the Nation program.

It also committed to a blueprint for 'future proofing' regional Australia's communications future. This commitment was aimed at addressing recommendations of both the Esten's inquiry as well as many of the recommendations in the Broadband Advisory Group report. The Government will develop a National Broadband Strategy (NBS) with funding of $142.8 million over four years. A central objective of the NBS will be to provide access to affordable broadband services in regional Australia.

The NBS envisages a partnership between the Commonwealth, the States and Territories, local government and industry in coordinating future demand for broadband services, particularly in regional Australia. A National Broadband Strategy Implementation Group (NBSIG) will develop and oversee the Strategy, with Commonwealth Government funding of $2.9 million. The Government is committing an additional $8.4 million over four years towards a network of broadband demand aggregation brokers in regional Australia. The Coalition ?? will commit $23.7 million over four years to a Coordinated Communications Infrastructure Fund (CCIF) to accelerate the roll-out of broadband into regional Australia in concert with the demand aggregation brokers. The States and Territories will be asked to at least match this funding dollar-for-dollar.

The Government also announced that it would spend $107.8 million over four years on the Higher Bandwidth Incentive Scheme (HBIS). The HBIS will provide financial incentives to higher bandwidth service providers to offer services in rural and remote areas at prices reasonably equitable with those available in urban areas. A one-off 'per customer' payment will be made to providers of higher bandwidth data services in areas where a minimum level of service, defined in terms of price and functionality, is not likely to be provided commercially in the immediate future. To receive the payment, providers will need to offer services at prices broadly comparable to prices charged in urban areas. The Government announced that it would finalise the details of the HBIS in consultation with key regional stakeholders and industry over the next six months.

The Government also announced a range of other actions in response to the Regional Telecommunications Inquiry.

- Review of the Universal Service Obligation including assessing whether current arrangements are impeding the development of competition in regional, rural and remote areas.[7]

- Telstra will provide the Government with a formal undertaking on its strategy, including timeframes, to improve, as soon as possible, phone services affected by the use 6/16 and similar pair gain systems.

- Telstra will provide the Government with a formal undertaking on the timing of the completion of the upgrade of its remaining older radio concentrator systems under its Remote Areas Telecommunications Enhancements program.

- The Government will work with Telstra and the ACA to review payphone policy and ensure that the provision of payphones under the Universal Service Obligation continues to be effective and relevant.

- Refining the Network Reliability Framework and ensuring that it addresses the worst performing exchange service areas.

- The Government has allocated $15.9 million over four years to extend terrestrial mobile phone services to smaller communities and regional highways where additional coverage is feasible with Government support for capital costs.

- A further $4 million has been allocated over four years to extend the satellite phone subsidy. The eligibility guidelines will be reviewed.

- A new licence condition will be imposed on Telstra requiring it to provide a minimum dial-up Internet speed of 19.2kbps or equivalent over its fixed line network. Telstra will provide the Government with a formal undertaking on implementation of a strategy to address dial-up data speed issues arising from poorly performing pair gain systems.

- The Government will work with Telstra and through the $8.3 million Telecommunications Action Plan for Remote Indigenous Communities to improve services for remote indigenous communities.

- The Government has allocated $10.1 million over four years for information technology training and support for rural and remote communications users.

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7 Advertisements were placed in the national press on 13 December 2003 by the Department of Communications, Information Technology and the Arts inviting submissions from interested parties to a review of the operation of the USO and the CSG as required under section 159A of the *Telecommunications (Consumer Protection and Service Standards) Act 1999*. The Department's Report was tabled on 17 June 2004.

- The government will investigate timeframes for the connection and repair of ISDN services and seek advice from the ACC on ISDN pricing arrangements.

- The government has allocated $107.8 million over four years for a Higher Bandwidth Incentive Scheme aimed at regional, rural and remote communities.

- Allocation of $8.4 million over four years to demand aggregation brokers.

- A licence provision will be imposed on Telstra requiring it to maintain a local presence in regional, rural and remote Australia.

- The Government will develop a strategic plan for regional telecommunications and will legislate to require regular reviews of the adequacy of services in regional, rural and remote Australia.

- The Government accepted the principle that support for non-commercial service improvements in regional Australia should be provided transparently by Government, and should aim to promote competition and minimise market distortions.

A copy of the report and the Government's response can be accessed through the web site of the Department of Communications, Information Technology and Arts at http://www.dcita.gov.au.