The Allen Consulting Group

Review of the provision of telecommunications equipment to consumers with disabilities

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Report to the Department of Communications, Information Technology and the Arts

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Contents

Glossary of terms[1] and acronyms

2G second generation mobile telecommunication	Mobile telecommunications services that use digital techniques, providing voice communications and a relatively low transmission rate for data. 2G technologies deployed in Australia are GSM and CDMA.
3G third generation mobile telecommunications	A broadband mobile telecommunications platform supporting multimedia voice, video and data services. WCDMA and CDMA2000 are the 3G technologies derived from the GSM and CDMA 2G technologies respectively.
AAD Australian Association of the Deaf	A national peak organisation for deaf people in Australia. It represents the views of deaf people who use Auslan (Australian Sign Language).
AAPT	A carrier.
ABS Australian Bureau of Statistics	Australia's official statistical agency. The ABS assists and encourages informed decision making, research and discussion within governments and the community, by leading a high quality, objective and responsive national statistical service.
ACA Australian Communications Authority	Former Commonwealth regulatory authority for telecommunications and radiocommunications. Merged with the Australian Broadcasting Authority in July 2005 to form the Australian Communications and Media Authority. Also see ACMA.
ACCC Australian Competition and Consumer Commission	An independent Commonwealth statutory authority, formed in 1995 to administer the *Trade Practices Act 1974* and other acts.
ACE Australian Communication Exchange	The current National Relay Service and text-based emergency call service provider.
ACIF Australian Communications Industry Forum	Communications industry self-regulatory body established in May 1997 responsible for developing industry codes, technical standards and service specifications.

[1] Most of the definitions for terms and acronyms are taken from: Australian Communications and Media Authority 2005, *Telecommunications Performance Report: 2004-05*, Melbourne, pp. 204-15.

ACMA Australian Communications and Media Authority	Commonwealth regulatory authority for broadcasting, online content, radiocommunications and telecommunications, with responsibilities under the *Broadcasting Services Act 1992*, *the Radiocommunications Act 1992*, *the Telecommunications Act 1997* and related Acts. Established on 1 July 2005 following the merger of the Australian Communications Authority and the Australian Broadcasting Authority.
ADSL **Asymmetric digital subscriber line**	A transmission method allowing high rate communication over existing copper wires. The downstream data (data downloaded by user) transmission rate is much higher than the upstream rate.
AMPS advanced mobile phone system	The so-called 'first generation' mobile phone system used for the analogue mobile phone service in Australia, which closed in 2000.
AMTA Australian Mobile Telecommunications Association	Association of mobile industry suppliers and manufacturers.
Auslan	Australian sign language.
BlackBerry	The BlackBerry is a handheld wireless device providing e-mail, telephone, text messaging and web browsing and other wireless data access.
BMHS Blue Mountains Hearing Study	A population-based survey of age-related hearing loss in an older Australian community.
BPL broadband over power lines	Communications technique using the electricity grid or mains cabling within premises to deliver broadband services at higher data rates than previous power line communications.
Broadband	A class of Internet access technologies, such as ADSL, HFC cable and WiFi, offering a data rate significantly higher than narrowband services. These services are usually 'always-on' and do not tie up a telephone line exclusively for data. Broadband is a relative rather than absolute concept, with 256 kbit/s widely regarded as the lower limit for broadband access.
Bit	Binary digit — either a one or a zero.
Braille TTY	For deafblind customers, this TTY outputs conversations in Braille as well as on a standard TTY fluorescent display.

Bundling	Refers to the process by which carriers offer consumers a combination of services (for example, STS, Internet and mobile) on the same plan. The bundled services are often offered at a lower price than the sum of the parts.
Byte	A set of bits that represent a single character. There are eight bits in a byte. While data transmission rates are usually measured in bits per second, data volumes are usually measured in bytes.
Carrier	The holder of a telecommunications carrier licence in force under the *Telecommunications Act 1997*.
CDMA Code Division Multiple Access	Access technique for digital wireless communications, including mobile phone and satellite services. The technique employs a bandwidth much larger than the original signal. Each signal is uniquely encoded and decoded, and in this way many signals can occupy the same spectrum.
CLI calling line identification	Data identifying the originating number or address.
CND calling number display	Service using CLI data that displays the calling party's number unless transmission of the number is blocked by the caller.
Coverage area	Geographic area within which mobile phone calls can be made. Coverage can be increased by installing radio base stations in new areas or by installing equipment to extend the range of coverage.
CRTC Canadian Radio-Television Telecommunications Commission	Independent agency responsible for regulating Canada's broadcasting and telecommunications systems. They report to Parliament through the Minister of Canadian Heritage.
CSG Customer Service Guarantee	The CSG sets timeframes for connection and repair. Adherence to these timeframes forms the basis for financial compensation.
CSP carriage service provider	Person supplying or proposing to supply certain carriage services, including a commercial entity acquiring telecommunications capacity or services from a carrier for resale to a third party. Internet and pay TV service providers fall within the definition of carriage service providers under the *Telecommunications Act 1997*.
DAB Disability Advisory Board	The Disability Advisory Board (DAB) is an ACIF advisory body, which was established to develop a framework for ensuring adequate and appropriate disability sector input into ACIF Codes and Standards.

DAP Disability Action Plan	A way for an organisation to plan the elimination, as far as possible, of disability discrimination from the provision of its goods, services and facilities. DAPs are submitted to HREOC.
DCITA Department of Communications, Information Technology and the Arts	The Department provides strategic advice and professional support to the Australian Government on a wide range of significant and rapidly changing policy areas including telecommunications.
DDA *Disability Discrimination Act 1992*	Commonwealth legislation that makes discrimination on account of one's disability unlawful.
DEA Disability Equipment Arrangements	The arrangements offered by individual carriers to distribute non-standard telecommunications equipment to consumers with disabilities.
DEP Disability Equipment Program	Programs for supplying people with disabilities with non-standard telecommunications equipment so that the have reasonable access to a STS on an equitable basis.
Dial-up subscribers	Subscribers who connect to the Internet via a modem and dial-up software utilising the PSTN or an ISDN connection that requires the user to dial up.
DSL digital subscriber line	Transmission technique that dramatically increases the digital capacity of telephone lines into the home or office. See also ADSL, xDSL.
EHLS Epidemiology of Hearing Loss Study	A study similar to the BMHS, conducted in the USA, and referred to in the BMHS.
EU-USO European Union Universal Service Obligation	The Universal Service Obligation as defined by the European Union, and that applies to those European countries.
FCC Federal Communications Commission	An independent United States government agency, directly responsible to Congress charged with regulating interstate and international communications by radio, television, wire, satellite and cable.
GB Gigabytes	A billion bytes.
Gbit/s Gigabits per second	Data transfer rate of a billion bits per second. See bit/s.
GPS global positioning system	Satellite navigation system operated by the United States Department of Defense for military and civil purposes.

GSM global system for mobile communication	The widely used European digital cellular network standard.
HCO hearing carry over	Available through the NRS, HCO enables people with speech impairment to listen to the telephone conversation of another person and type a response on a TTY.
HREOC Human Rights and Equal Opportunity Commission.	The Commonwealth agency with responsibility for administration of Australia's equal opportunity and anti-discrimination laws, including the *Disability Discrimination Act 1992.*
ILC Independent Living Centres	Information resource centres, which are located in every state and the ACT. Each centre displays a comprehensive range of products, including specialised telecommunications equipment, to assist with daily living activities.
Internet relay	Internet relay is an online way to place text relay calls. It works over the Internet so that relay calls are possible without a TTY. Instead, relay users connect to a relay operator through the Internet relay website, and communicate by typing outgoing messages on their computer keyboards and reading incoming messages on their computer monitors.
IP Internet protocol	The set of communication standards that control communications activity on the Internet.
ISDN integrated services digital network	Digital carriage network for both voice and data. A digital alternative to an analogue PSTN.
ISP Internet service provider	A CSP, or another service provider, offering Internet access to the public.
Jumbling	Garbling or errors in the text of messages transmitted to or from a TTY.
KB kilobyte(s)	A thousand bytes. See byte(s)
Kbit/s kilobits per second	Data transfer rate of 1000 bits per second. See bit.
MB Megabyte(s)	One million bytes. See byte(s).
Mbit/s Megabits per second	Data transfer rate of one million bits per second. See bit.
MHz Megahertz	Data transfer rate of one million bits per second. See bit/s.

Miniprint	An easy to use TTY with a built-in printer. It has fewer functions that the Superprint.
MMS multimedia message service	Mobile telecommunications data transmission service for sending messages with a combination of text, sound, image and video to and from MMS-capable handsets.
Nokia 9210	A portable product that combines phone, fax, email, calendar, contacts, word processor, spreadsheet, presentation viewer, WAP, web browsing functions.
NRS National Relay Service	Service that provides access to the standard telephone service for people with hearing or speech impairment through the relay of voice, modem or TTY communications. Operates as a relay service between voice and non-voice users of the standard telephone service. The relay service is currently provided by the Australian Communication Exchange. Westwood Spice operates a separate Outreach Service that promotes the NRS.
Optus	A carrier.
Payphone	A telephone available to members of the public where calls may be paid for with coins, phone cards, credit cards or reverse charge facilities.
PDA personal digital assistant	A term for any small mobile hand-held device that provides computing and information storage and retrieval capabilities for personal or business use.
Post-paid	A contract under which a user is charged on a periodic basis based on service usage during the billing period.
Pre-paid	A contract system by which users pay an amount up front to purchase a certain amount of usage or credit.
Primus	A carrier.
Printacall	Printacall is a specialist organisation supplying products for use by deaf, hearing impaired and speech impaired people.
Sidekick	A mobile phone that includes wireless e-mail, text messaging, mp3 player, and camera functionalities.
SMS short message service	A form of mobile telecommunications data transmission service that allows users to send short text messages to each other using the mobile handset keypad.
SSR speech-to-speech relay	Available through the NRS, SSR enables two people with speech impairment to have a two-way conversation over the telephone.
Superprint	A model of TTY with a built-in printer.

STS standard telephone service	The telecommunications service defined as a carriage service providing voice telephony or an equivalent service that meets the requirements of the TCPSS Act and the DDA.
TADAust Technical Aid to the Disabled Australia	Technical Aid to the Disabled Australia (TADAust) is the national body that represents each of the State Technical Aid to the Disabled (TAD) organisations. Each TAD provides its service by designing and making aids to provide a degree of independence and an increase in the quality of life for people with disabilities and the frail aged.
TAPRIC Telecommunications Action Plan for Remote Indigenous Communities	A Plan developed from a study commissioned by the Australian Government that gathered information about telecommunications services required by remote Indigenous Communities.
TCPSS ACT ***Telecommunications (Consumer Protection and Service Standards) Act 1999***	Legislation administered by ACMA covering consumer safeguards including the CSG, the USO, the TIO scheme and regulation of telephone sex services.
TEDICORE Telecommunications & Disability Consumer Representation	A project hosted by the Australian Federation of Disability Organisations with funding for consumer representation under section 593 of the *Telecommunications Act*. TEDICORE consults with the industry and regulators to promote equity, accessibility and usability of telecommunications products and services.
Telstra	A carrier. Also the USP.
ToIP Text over IP	ToIP describes the transport of real-time text over IP networks. This gives the user the feel of 'real-time' communication, just like voice or video systems that transport streaming media over IP.
TIO Telecommunications Industry Ombudsman scheme	Industry-funded independent dispute resolution service established in December 1993, for consumers unable to resolve complaints with their telecommunications carrier or CSP (including ISPs).
TTY Teletypewriter	Telephone typewriter where communication is typed after the call is connected, allowing people with hearing or speech impairment to use telecommunications. Calls can be connected to another TTY user or relayed by the NRS.

Uniphone	A product that combines the features of a TTY and a telephone.
Universal design	Universal design is an approach to the design of products, services and environments to be usable by as many people as possible regardless of age, ability or situation.
USO universal service obligation	Obligation under the *Telecommunications Act 1997* to ensure standard telephone services, payphones and prescribed carriage services are reasonably accessible to all people in Australia on an equitable basis, wherever they reside or carry on business.
USP Universal Service Provider	A carrier or Carriage Service Provider responsible for fulfilling the Universal Service Obligation (USO). Telstra is currently the sole universal service provider in Australia, but additional universal service providers may be declared in the future.
VCO voice carry over	Available through the NRS, VCO enables a person with a hearing impairment to speak to another person. The relay officer listens to the conversation and types the response for a person with hearing impairment to read on a TTY.
VoIP voice over Internet protocol	A protocol for transmitting voice over packet-switched data networks such as the Internet.
WAP wireless access protocol	An open, global specification that allows mobile users with wireless devices to access data services (including the Internet). Typically provides access to email and information such as news, sport, weather, flight schedules, stocks, banking or shopping.
WCDMA Wideband Code Division Multiple Access	A technique that uses direct spreading of data. A direct-sequence CDMA system where data is multiplied with quasi-random bits derived from spreading codes in two modes of operation—frequency division duplex and time division duplex. Supports images, mobile or portable voice, data and video communication at up to 2 Mbit/s (local area access) or 384 kbit/s (wide area access).
WLL wireless local loop	Use of radiocommunications rather than cable to connect a fixed or mobile handset and a specified telecommunications base station connected to a telecommunications network.
xDSL	General term for digital subscriber line transmission methods.

Executive summary

Introduction

The Australian Government Department of Communications, Information Technology and the Arts (DCITA) has commissioned this review in order to gather information about, and assess the cost and effectiveness of, the current arrangements for providing telecommunications equipment to consumers with disabilities, and key issues for the next five to ten years. Arrangements for ensuring consumers with disabilities have access to the Standard Telephone Service (STS) have been in place since 1997. Technological change, such as the introduction of mobile and IP-based technologies, has affected the requirements of consumers with disabilities.

The STS is defined in the *Telecommunications (Consumer Protection and Service Standards) (TCPSS) Act 1999* as a carriage service for the purposes of voice telephony, or a form of communication supplied when voice telephony is not practical for a user with a disability and another form of communication (e.g. a teletypewriter) is required. Other purposes can be designated through regulations. Features of a STS, (that is, a basic fixed phone line), include access to local, national and international calls, 24-hour access to the emergency call service number, operator assisted services, and itemised billing, including itemised local calls on request.

The Universal Service Obligation (USO), which is set out in the *TCPSS Act* along with other consumer safeguards, guarantees all Australians reasonable access to a STS on an equitable basis. Consumers with disabilities have a number of specific needs and requirements in order to be able to access and use the STS (see Box E.1). For these consumers, the current arrangements provide for non-standard telecommunications equipment to be made available on the same basis as the standard equipment. Legislation and regulations that are particularly relevant to the telecommunications needs of consumers with disabilities include the *Disability Discrimination Act 1992 (DDA)* and the *Telecommunications (Equipment for the Disabled) Regulations 1998*.

This report presents information about the current arrangements for the provision of telecommunications equipment to consumers with disabilities, as well as findings on the extent to which these arrangements are meeting the current and medium term requirements of these consumers.

Review terms of reference

This review's terms of reference are listed below.

Effectiveness of current arrangements

- Having regard to the current regulatory and self-regulatory arrangements for the provision of telecommunications equipment to people with a disability, examine the effectiveness of these arrangements in meeting the requirements and needs of consumers with a disability.

- Examine international arrangements for the provision of telecommunications equipment to consumers with a disability and compare these with the arrangements in place in Australia.
- Consult with consumers, including potential consumers, of disability equipment services to determine their awareness of, experiences with and attitudes towards the current equipment programs available to them and their requirements for access to new and emerging technologies and services over the next 5-10 years.

Key issues for the future

- Examine current research into new and emerging digital telecommunications technologies that could provide improved access for people with disabilities to telecommunications services. This should include consideration of equipment connectivity and compatibility issues, the suitability of specialised equipment, such as TTY, to meet the needs of people with disabilities, emerging technologies such as multimedia and VoIP applications, and access to other services including mobile phone and Internet services.
- Examine the likely demand over the next 5-10 years for access to telecommunications customer premises equipment obtained through disability equipment programs. This should include emerging areas of need such as the aging population, Indigenous communities and people living in non-urban areas. The impact of any proposed alternative arrangements on industry and government should also be identified.

Cost of existing carrier disability equipment programs

Conduct an assessment of the estimated annual and per capita cost of delivering the disability equipment service to consumers under the current regulatory and self-regulatory arrangements, and any proposed alternative arrangements.

Box E.1

REQUIREMENTS AND NEEDS OF CONSUMERS WITH DISABILITIES

People with vision impairment (including blindness) may experience difficulties with:

- seeing the numbers or function labels on the keypad;
- being able to get to a ringing phone in time to answer it;
- holding the handset, reading Braille and entering numbers at the same time;
- installing equipment unassisted;
- using equipment — such as phones, computers or interfaces — that has a 'soft keypad (where keys appear on a screen that responds to touch) or keys that are not well defined or separated.

People with hearing impairment (including people who are Deaf) may experience difficulties with:

- hearing spoken conversation; or
- conversing vocally or in a language other than Auslan.

People with speech impairment (including mutism) may experience difficulties with conversing vocally over the phone.

People with a mobility or dexterity impairment may experience difficulties with:

- installing equipment unassisted;
- being able to get to a ringing phone in time to answer it; or
- using equipment, (e.g. phones, computers or interfaces) that has a 'soft keypad' or keys that are not well defined or separated.

People with an intellectual disability may experience difficulties with:

- installing equipment unassisted; or
- using a handset with a lot of keys or functions.

Review method

The project team conducted a literature review of existing material related to the needs of consumers with disabilities, telecommunications issues, and arrangements in other countries. This included a review of relevant legislation and regulations in Australia, including self regulation where relevant, recent Australian and international reports, data from the Australian Bureau of Statistics (ABS) and the Australian Institute for Health and Welfare (AIHW), and information from the carriers, the Australian Communications Exchange (ACE), and groups representing people with disabilities. Information was also obtained from overseas sources.

The project team also sought the views of relevant stakeholders, including consumers, disability and advocacy groups, suppliers of equipment and services, and regulators. Meetings and telephone consultations were held with key government agencies, representatives of disability groups, carriers and other parties. These organisations provided information in relation to the current disability equipment arrangements and on the effectiveness of those arrangements in meeting the telecommunications needs of consumers with disabilities.

The project team conducted eight focus groups comprising representatives of key disability organisations and relevant individuals, meeting in both metropolitan and regional areas. These focus groups provided first-hand knowledge of consumer experiences with the current equipment arrangements and discussed how new technology and services might impact on current arrangements. In total, some 64 participants attended the focus groups.

Focus group participants represented only a small sample of actual and likely users of telecommunications disability equipment. Although the focus groups included people with a wide range of disabilities and varying levels of impairment, it is difficult to judge whether the participants were a representative sample. Participants were generous in sharing their time and their experiences with the focus groups, and in thinking about some of the factors that they believed would drive future telecommunications needs for consumers with disabilities.

Effectiveness of the current arrangements

The current arrangements

For consumers with disabilities, who are unable to use standard equipment, the USO is met through the provision of non-standard equipment. Examples of some of the equipment that is available to eligible consumers include:

- teletypewriters for people who are hearing or speech impaired;
- cordless phones for people who are mobility impaired; and
- phones with enlarged buttons for people with limited dexterity, or who are vision impaired.

Carriers that provide a standard handset with the STS are required under the DDA to offer non-standard equipment to consumers with disabilities on the same basis and for the same price as a standard handset unless doing so would result in unjustifiable hardship for the provider. The carriers also fund a National Relay Service (NRS) that provides text-based services, voice carry over (for people who are hearing impaired but able to speak) and hearing carry over (for speech impaired people who are able to hear).

The total current demand for telecommunications disability equipment is for about 18 000 units per annum. The *Telecommunications (Equipment for the Disabled) Regulations 1998* describe only the sorts of functionality that the equipment on offer must have, leaving the carriers to choose the specific products that best meet the functionality requirements, and the needs of their customers.

Both Telstra and Optus operate a disability equipment program (DEP), and provide free access phone numbers for people with a disability to access discounted directory services and call connect, as well as mechanisms to better identify and address their consumers' equipment needs. These carriers also consult with disability organisations to better understand the needs of different disability groups, and to disseminate information about their services.

Other carriers do not operate disability equipment programs of their own, but some provide disability telecommunications equipment through arrangements with Telstra. Most carriers are signatories to codes developed by the Australian Communications Industry Forum (ACIF), the communications industry's self-regulatory body. In 2001, ACIF published a number of guidelines in relation to access to telecommunications for people with disabilities.

The Independent Living Centres, which receive funding from Australian, state and territory sources, display and provide trial access to a comprehensive range of products and equipment to assist people with disabilities to perform daily living activities independently.

In relation to term of reference a(i), Chapter 2 of this report concludes that:

- The *DDA*, the *TCPSS Act*, the *Telecommunications Act 1997*, and the *Telecommunications (Equipment for the Disabled) Regulations 1998* ensure reasonable access to the STS on an equitable basis for consumers with a disability. However, in spite of the existence of the *DDA*, and the USO, it was only after the Scott case led to a HREOC inquiry that arrangements were made to provide teletypewriters at the same price as standard handsets. This suggests that in the absence of legislation, carriers would have been unlikely to offer more expensive, non-standard equipment to consumers with disabilities on the same basis and for the same price as standard equipment.
- Disability equipment initiatives, products and services that involve non-standard products are difficult to justify commercially, because the market is small, and the products and services may not be profitable.
- Taken together, Australian legislation relating to the provision of telecommunications equipment to consumers with disabilities provides a sound framework for ensuring reasonable access to the STS on an equitable basis, although it is limited to the STS.
- Carriers undertake appropriate consultation with people with disabilities — either through consultative forums of their own, or through ACIF — in order to improve equipment, services and consumer awareness.
- The *Telecommunications (Equipment for the Disabled) Regulations 1998* provide guidance on the nature of the equipment that carriers need to provide to people with a disability but leave the carriers with some discretion as to exactly what is provided.

- In addition to the legislative and regulatory measures, ACIF has developed a set of guidelines on Access to Telecommunications for People with Disabilities. These guidelines are reflected in ACIF's codes of practice, such as the code that establishes the minimum set of standards that service providers are to meet when providing information to consumers about prices, terms and conditions of the products on offer.

Effectiveness of the current arrangements

The effectiveness of the current equipment arrangements depends on a range of factors, including the extent to which the eligibility criteria under the current equipment arrangements are appropriate to the needs of consumers with disabilities; and the availability of equipment that matches the needs of consumers with disabilities.

The number of requests for disability equipment declined in 2004-05 compared to 2003-04. This decline has been attributed to the upgraded features of new standard rental handsets. The main benefit of the new standard handsets is that they incorporate an accessible volume control. Volume control phones have been one of the most frequently requested items.

Six carriers reported details of their supply of the STS for the period 2004-05. Telstra, AAPT and Primus reported receiving 10 587 requests for new disability equipment between them, of which they were able to meet 10 562, or 99 per cent of the requests received. Thus, as a whole, carriers are able to effectively supply telecommunications disability equipment under the current arrangements to consumers that request it.

However, the performance of individual carriers varied from their meeting as little as 50 per cent to as much as 100 per cent of the requests received. The fact that there are implementation issues at the carrier level shows that the current regulatory and legislative arrangements are not by themselves fully effective in providing all customers with disabilities with access to the STS.

Some non-Telstra customers are uncertain as to whom they should apply for disability equipment. A recent study by Women With Disabilities Australia has demonstrated that in addition to this confusion, the information provided by carriers was not always appropriate or helpful. Thus current arrangements are not fully effective in providing consumers with disabilities with the necessary information.

The USO also obliges Telstra, as the Universal Service Provider (USP), to provide Australians with reasonable access to payphones on an equitable basis. In order for someone with a hearing or speech impairment to use the payphone, some of these payphones are enhanced with teletype functionality, and some payphones are lowered to facilitate access for people who are wheelchair bound.

Some stakeholders link the decline in the numbers of payphones with the rapid take-up of mobile phone services while others argue that people with disabilities, have become more reliant on mobile phones because of the reduced numbers of payphones. While overall payphone services have declined, the number of teletype-enhanced payphones has increased from 88 in 1998-99 to more than 230 at present, improving away-from-home access to the STS for people who are hearing impaired or deaf.

In relation to term of reference a(i), Chapter 3 of this report concludes that:

- In 2004-05, three carriers (Telstra, AAPT and Primus) met nearly all the requests they received for equipment. The number of unmet requests was attributed to lack of equipment availability issues, lack of consumer awareness, and lack of proper communication between the carrier and the customer. This demonstrates that the current arrangements, by themselves, are not fully effective in providing all consumers with disabilities with access to the STS.
- In the majority of cases, equipment is provided, and facilitates access to the STS for someone with a disability but this does not mean that the needs and requirements of these consumers are being met fully and effectively. However, non-standard equipment will not always have the same functionality as standard equipment. The aim of the current arrangements is to provide consumers with reasonable access to the STS on an equitable basis.
- In recent years there has been a significant decline in the number of requests for telecommunications disability equipment. This has been attributed to the introduction of upgraded standard handsets by Telstra and Optus that include an accessible volume control. To some extent, demand for non-standard equipment can be addressed by improving the functionality and accessibility of standard equipment.

Arrangements in other countries

Arrangements in some other countries that are comparable to Australia have been examined as part of this review. In the USA, each state and telecommunications service provider is required to ensure accessibility to all users through a text relay service, equipment that is TTY compatible, equipment that is operable by those individuals with low vision and limited hearing, and through bills, manuals and other written and verbal communication in alternate formats, including Braille and large print.

Text and Internet relay services operate in the United States through a shared state and federal funding mechanism paid by levies on subscribers and telecommunications service providers. The US Federal Communications Commission also compensates relay operators to provide a video relay service at no charge to people with a hearing impairment. In 2006, more than six text relay service providers across the United States provided a video relay service. Some states such as California provide more extensive telecommunications services for people with disabilities.

Canada and the UK have no cohesive, national disability equipment distribution strategy that is equivalent to Australia's disability equipment arrangements. Individual provinces and counties in Canada and local authorities in the UK make arrangements at their own discretion. The range of equipment that is available for consumers with disabilities to purchase, however, is more extensive than the range available in Australia.

New Zealanders with disabilities can choose to rent an item from a range of subsidised products, including a mobile teletypewriter. New Zealand also has a text and Internet relay service.

The European Union has a Directive on universal services and users' rights relating to electronic communications networks and services, which requires:

- access to a text relay service and rebate scheme;

- requirements to make public payphones accessible to customers with disabilities;
- directory information free of charge and available through the text relay service;
- telephone bills in Braille and large print formats; and
- priority fault repair.

Implementation of these requirements is variable across the EU, with some countries providing not all of these services and others providing more. The UK complies with all five requirements. British Telecom rents equipment to people with a disability, although not always at the same price as standard equipment. In some parts of the UK, individual shires and counties make their own disability equipment distribution arrangements.

The UK government has recently undertaken a review of its provision of telecommunications to people with disabilities. Issues under consideration include the introduction of a video relay service, governance of the text relay service, web-based access to text and video relay, and payphone accessibility.

Sweden and Denmark provide telecommunications to people with disabilities in ways that go beyond that provided in Australia. Norway provides services equivalent to some of the EU-USO requirements.

In relation to term of reference a(ii), Chapter 4 of this report concludes that:

- Suggestions that the equipment that is available through the equipment arrangements in Australia is 'ten to twenty years' behind the rest of the world is not supported by the evidence examined in this review. Some other countries may have a wider range of telecommunications products available (such as more sophisticated mobile phones that can place calls through a text relay service, web cameras, faster Internet connections, etc) available. However, not all of these products are offered at a subsidised rate or through that country's equipment arrangements.
- Australia's current arrangements for providing telecommunications disability equipment to consumers with a disability is comparable with the best of those in the countries discussed in this report.
- There are examples where other countries provide some items of equipment and/or services for persons with a disability that exceed those currently provided in Australia. In some cases, the subsidised provision of *services* is offered instead of the subsidised provision of *equipment*.
- Some of the more advanced relay services that are offered in other countries (for example, Internet or video relay) are technologically superior to what is currently available in Australia. However, in order to benefit from these relay services, users in most countries must purchase the equipment at their own expense.

- In Europe, the EU has a USO that covers some special arrangements for consumers with disabilities, but these do not include the provision of telecommunications equipment in a way comparable to that of Australia. Sweden and Norway (not an EU member) provide assistance with equipment at a national level and the UK provides limited assistance at a local level.
- Canada and the UK have recently reviewed aspects of their telecommunications arrangements for consumers with disabilities. Some changes are anticipated to the current arrangements in these countries.
- In the USA and Canada, responsibility for assisting consumers with disabilities is shared between federal and state/provincial governments. As a consequence, there is some variability in the provision of equipment and services to consumers with disabilities across these two countries. Neither of these countries has a coherent national strategy that is comparable to Australia's.
- Comparisons between Australia and other countries are difficult because of different national welfare and tax systems that may provide relief for the cost of telecommunications to persons with disabilities. Tax rebates on the purchase of specialised telecommunications equipment may be of limited benefit to the disabled community, where income levels are lower than average.

Consumer perspectives

The level of awareness among focus group participants about the current equipment arrangements varied in a number of respects:

- in some focus groups, only one or two people were aware of the current equipment arrangements, while in at least one focus group, all of the participants knew of the arrangements;
- the level of awareness about the current equipment arrangements was generally higher amongst participants in the capital cities when compared to those taking part in regional locations; and
- participants who were limited in their mobility or dexterity generally had less knowledge about the current equipment arrangements than participants with hearing, vision or speech impairments.

Of the participants that had *some* knowledge of the current equipment arrangements, only a few had a detailed understanding of what was available and how the eligibility and decision-making process worked, however, this included people who did not currently use any equipment through the current arrangements. Several participants used equipment provided through the current arrangements, but had no knowledge of the emergence of new products and services that had become available that they could benefit from.

In general, however, detailed knowledge or awareness of the current arrangements was limited. The main source of information among participants was through informal networks, such as colleagues, friends and family. The information that is gathered through these channels, however, is often incomplete, incorrect or out of date. Formal information networks, such as those that are sponsored by carriers and by advocacy groups, also play a significant role in informing potential users.

Promotional material prepared by the carriers and equipment demonstrations were welcomed by focus group participants but few had seen these forms of marketing. Several participants also reported that some carrier shopfronts have been found to be of little help to people with disabilities. The information available directly from carriers also played a part in influencing consumers' choice of carrier. One of the most frequently mentioned factors was cost. However, the lower charges offered by some carriers had to be considered against the fact that some of these carriers did not provide telecommunications disability equipment, or any disability services.

The provision of telecommunications equipment cannot always be separated from the provision of related services. Some of the focus group participants considered that there were good deals available with carriers that bundled together one or more services. However, other participants had deliberately chosen not to purchase a bundle because they felt that the service mix did not match their needs. This made them more reliant on their STS, and on their disability telecommunications equipment.

In relation to term of reference a(iii), Chapter 5 of this review concludes that:

- Consultations with consumers found a surprisingly low level of knowledge of disability equipment arrangements. Around 50 per cent of focus group participants had some knowledge of the current equipment arrangements. This was lower than expected, since many participants were associated with disability organisations.
- Focus group participants who were mobility impaired had the least knowledge about the current equipment arrangements compared to other consumers with disabilities. Information about disability equipment arrangements needs to be better communicated to the relevant health service providers and support organisations for this disability group.
- Some consumers have misunderstandings and misconceptions about Australia's disability equipment arrangements. This is a sign that the ways in which information is provided need to be improved. Participants raised instances where they had grown frustrated with trying to obtain information, or were provided with incorrect responses to their questions. While some people were unable to obtain the information directly from their carrier, it was also clear that some participants either had not sought information directly from their carrier, or they were relying on information that was out of date.
- Informal networks are the most common way people access information about telecommunications disability equipment. Sometimes the information that is gathered through these networks is incorrect, incomplete or out of date. This is a problem because people may decide not to apply for telecommunications disability equipment because they have heard that a product is not available, or that they are not eligible.
- Consumers want a more structured approach to the provision of information about telecommunications disability equipment. However, there was no consensus on the best way to provide information. It is clear that individual consumers are more receptive to different forms of information communication, and no single approach will meet all needs.

- The experience of focus group participants suggests that staff at the carriers' shopfronts generally have little knowledge of products or services that can assist consumers with disabilities, and little understanding of the needs of consumers with disabilities. Information about how to apply for equipment or whether or not the person enquiring is eligible to hire non-standard equipment was reported to be difficult to obtain.

Consumer views on access to new technologies

Focus group participants were also asked about the way in which the current equipment arrangements met their telecommunications needs and requirements outside of the STS. Most of them had limited awareness of new technologies and the potential impact of these technologies on their needs. Some consumers with disabilities have discovered the benefits of recently introduced technologies such as SMS, email and the Internet, the use of software that converts text into speech and mobile phones designed for the sight impaired.

Other aspects of the changing technological and communications environment are proving to be more challenging, such as Interactive Voice Response (IVR) menus, using the telephone for banking and paying bills, and the move to digitise many analogue services. Participants highlighted that there was a real need for good information about the sorts of products and services that they could use and potentially benefit from, and that this information was difficult to obtain even when they approached service providers directly.

In relation to term of reference a(iii), Chapter 6 of this review concludes that:

- The changing business use of communications technologies impacts on people with disabilities, because there is a serious lack of awareness among the wider Australian population about the communications ability and needs of people with a disability. Some consumers with disabilities are unable to easily conduct business over the phone or the Internet because of accessibility issues.
- There are a number of telecommunications products that consumers with disabilities can benefit from. However, these consumers have difficulty in finding information about the products, including learning about features of the products that may prevent persons with disabilities from being able to use them.
- The relative importance of the fixed line telephone as a communications device is declining due to increased take up of mobile phones and Internet communications. However, the USO does not guarantee reasonable access on an equitable basis to mobile phones and the Internet in the way it guarantees access to the STS. Some consumers with disabilities need non-standard equipment or software to be able to access mobile phones and the Internet, and must purchase these add-ons at their own expense.
- Most Australians have a wide range of options from which to choose a mobile phone or an Internet connection that meets their needs and budget. The number of options that meet the communication needs of consumers with disabilities is often limited and more expensive. As a result, current mobile and Internet arrangements are not able to meet the needs and requirements of some consumers with disabilities.

- Given that someone with a disability, on average, has a lower income than someone who does not have a disability, the relatively high expense of mobile handsets, broadband connections, software, equipment and aids that meet the communication needs of someone with a disability means that some individuals with a disability cannot afford to access these products or services. The current disability equipment arrangements do not address this inequity, because they address the provision of non-standard equipment to consumers who are unable to use standard equipment to access the STS.
- If the scope of the USO were extended in order to guarantee reasonable access to mobile phones and broadband on an equitable basis, this guarantee would apply to all Australians, and not just to those with a disability. Currently, it is not economically feasible to extend the guarantee to include access to mobile phones and broadband to all Australians regardless of where they may live or carry on business.
- Standard products that can be used by consumers with disabilities — such as mobile phones and broadband — are on average more expensive than the standard products that are available on the market. This is because some consumers with disabilities are only able to use more expensive items of equipment.
- Consumers with disabilities are purchasing telecommunications equipment outside the current equipment arrangements. This is a reflection that some of these consumers have communication needs that are not currently catered for by the current disability equipment arrangements — such as Braille displays for computers, and screen reading and voice recognition software.
- Extending the scope of the USO or the current equipment arrangements to apply to equipment and software that facilitates mobile phone or Internet access for someone with a disability is not currently feasible.
- Not all consumers with disabilities — particularly the elderly — are interested in learning how to use new products, such as mobile phones and the Internet, regardless of the cost. They are more comfortable with using the fixed line telephone, and thus access to the STS remains important.

Key issues for the future

New and emerging digital technologies

Mobile phones and other handheld devices, together with Internet communications, provide major opportunities for improved telecommunications access for people with disabilities. For example, the new 3G mobile phones and broadband Internet offer the potential of multimedia communication, through video, voice and text. Modern mobile phones are also available that have been designed to cater for the needs of the blind and vision-impaired. While these advances provide a number of new communication options, they are not perfect substitutes for the STS. In addition, not everybody owns or wants to use a computer, and for those that do, a computer is relatively expensive and depreciates quickly.

There are also some new technologies are a threat to current arrangements (e.g. current TTYs in a digital environment), and are causing concerns for stakeholders. Other technologies, such as VoIP, offer cost savings for all consumers, but the reduction in quality may prevent someone with a hearing or speech-impairment from taking advantage of these savings. Australia is not alone in facing these challenges, and can learn from the experiences of other countries. Aligning Australia's product standards more closely with countries that develop the equipment — currently, some Australian standards are more rigorous than international product standards — will ensure that Australia is able to benefit from the disability equipment solutions that are available overseas, particularly in Europe.

In relation to term of reference b(i), Chapter 7 of this report concludes that:

- In spite of the new technologies that are becoming available and the decline in the relative importance of the fixed-line service, the household penetration rate of fixed-line services remains high, at 95 per cent. This suggests that, while consumers with disabilities can benefit from a range of new products and services, demand for telecommunications disability equipment through the current arrangements will continue.
- Under the current arrangements, there is no incentive for equipment suppliers — the carriers — to embrace or respond to new technologies that could be of benefit to consumers with disabilities. This is demonstrated through the range of products that are available for sale in other countries, but which are not currently available in Australia through disability equipment programs (for example, compact TTYs, or Owasys™ mobile phones).
- Other useful initiatives that aim to facilitate access to telecommunications for consumers with disabilities include the Independent Living Centres, which display and provide information about different sorts of aids and telecommunications equipment, and Technical Aid to the Disabled Australia, which provides discounted access to the Internet among other things. Both of these initiatives operate on a non-commercial basis, which again suggests that legislative and regulatory measures are necessary to ensure that carriers offer non-standard equipment to consumers with disabilities.
- Moves to change the current STS from an analogue network to a digital or wireless network will have implications for sound and data quality. Some of the products that are available through the current equipment arrangements are not compatible with the changes being considered, and as yet, no long-term solutions have been identified.
- Not all consumers with disabilities are interested in learning how to use new and emerging technologies.
- Another factor that limits the uptake of these new technologies and products is the cost to the consumer. In some cases, the sorts of products that can be used by someone with a disability are more sophisticated or higher-grade versions of standard products. This raises issues of affordability.

Future demand

Australia's population is ageing, with the proportion of the population aged 60 years or more expected to increase from 18.1 per cent in 2003 to 22.1 per cent in 2016. As the likelihood of disability increases with age, demand for telecommunications disability equipment can be expected to increase in line with this. Growing demand will be offset to some extent by improved functionality in standard equipment — such as, for example, the volume control phone. Many older users may purchase their own equipment rather than rely on the current equipment arrangements.

There is also a higher incidence of disability among the Indigenous population in comparison to the rest of Australia. Indigenous communities are gaining greater access to telephone services as a result of Australian Government programs, which is likely to lead to a growth in demand for telecommunications equipment for Indigenous people with disabilities. The prevalence of vision and hearing impairments in remote Indigenous communities is higher than the national average.

In relation to term of reference b(ii), Chapter 8 of this report concludes that:

- Drawing together the available information, the total number of people who are using communication aids is less than 22 per cent of the number of people with a disability. This reflects the fact that some consumers with a disability can use standard equipment, some consumers with a disability choose not to or are unable to obtain non-standard equipment, and the remainder are unaware of the current equipment arrangements.
- It is difficult to estimate the number of users of telecommunications disability equipment. The one item for which there is some data — the TTY — is also one of the least frequently requested items of equipment under the current equipment arrangements.
- As the population ages, the proportion of the total population that potentially require telecommunications disability equipment will increase. In the next ten years, the population over 60 years of age will increase from 18.1 per cent of the total population to 22.1 per cent. This will result in some increase in demand for equipment through disability equipment arrangements. This increase may be off-set by improved functionality in standard products.
- As discussed in the earlier chapter, in spite of the new and emerging forms of communication that have become available in recent years, demand for a fixed-line service has remained relatively stable, and as a result, demand for telecommunications disability equipment is expected to continue.
- The demand for subsidised telecommunications equipment by Indigenous people with disabilities is likely to rise because of the growing availability of telecommunications in remote Indigenous communities coupled with the higher than average incidence of hearing and vision impairment in those communities.

Cost of existing carrier disability equipment programs

The cost of existing disability programs includes the cost of the equipment itself, marketing, administration, delivery and maintenance. Estimates for parts of these costs have been obtained on a confidential basis from the carriers consulted for this review. Based on this, the average cost for each new request filled is less than $80 (although, as noted in Chapter 2, the cost of individual items varies widely). On the basis of the number of new requests filled in 2003-04, the total cost of existing disability programs is estimated to have been less than $1.5 million for that year.

The per capita cost of equipment provision depends on the sort of equipment on offer. The introduction of a standard handset with an accessible volume control has already reduced demand for this product through the disability equipment arrangements. Removal from the equipment list of a highly demanded, low-cost item like the volume control phone would mean that the average cost of equipment still on the list would increase.

Improving the accessibility and functionality of standard products draws on universal design principles. The addition of an accessible volume control to the standard handset is a reflection of universal design principles. The same is also true of Telstra's development of the big button phone, where Telstra responded to consumer needs identified through its consultative process, and developed a product designed to meet as many of these needs as possible.

At the same time, the needs of some may conflict with the needs of others. For example, someone who is blind can use a standard handset, but would have difficulty using the big button phone because they cannot navigate the keypad single-handedly. There is often no 'one size fits all' solution to these accessibility issues. So far, universal design principles have been adopted where it is practical to do so — in the case of some of the optional add-ons to the big button phone — or where the potential market is relatively large — in the case of the accessible volume control.

Due to the small size of the market for disability equipment, most carrier shopfronts do not have non-standard products on display. For the same reason, some carrier shopfront staff are unable to answer queries in relation to the equipment because the majority of their time is concerned with other more popular products and services. Even in cases where people with disabilities are willing to purchase their own equipment — for example, in relation to mobile phones or computer software — they are often unable to find sales staff who understand their needs. As a result, people who are unable to use most types of standard equipment are marginalised.

As universal design principles become more widely adopted, and the functionality of standard products improves, the demand and the potential market for non-standard equipment is likely to fall. There is a risk that people who remain unable to use standard equipment — even as the standard equipment becomes more accessible — may become more marginalised over time.

A number of stakeholders suggested that one way of effectively meeting the communication needs of consumers with a disability was to have a sole supplier of equipment, and to separate the provision of the equipment from the provision of the service. The three possible options for a sole supplier include:

- supply of equipment by a contracted supplier, perhaps through a voucher scheme; and
- direct funding of the supplier through contributions from industry; or
- fully government funded and government administered shop-fronts.

Developing a sole supplier model would have implications with regards to market power, the ability of consumers to select an appropriate service plan from different carriers, issues of funding and administration for the sole supplier, and whether or not it could be commercially justified.

In relation to term of reference c, Chapter 9 of this report concludes that:

- On the basis of an estimated average cost of $80 for providing equipment to consumers with disabilities, the cost of existing disability programs in 2003-04 was less than $1.5 million.
- There is a limit to the extent to which universal design concepts can meet the needs of consumers with disabilities. Products such as the new standard handsets that incorporate a volume control, or the big button multi-purpose phone go some way towards meeting the needs of a large group of people, however, they do not meet the needs of people who are severely hearing or speech impaired, or blind.
- Universal design concepts are more likely to meet the needs of people who acquire a disability over time (for example, through ageing), or people with a mild disability, because they make up a larger share of the disabled community. This means that the average cost of equipment that is supplied through the current equipment arrangements will increase, because more sophisticated non-standard equipment will be needed to meet the needs of consumers who are unable to use the evolving standard products. The proportion of the population who require non-standard equipment may fall over time. However, there is a risk that these people may become more marginalised if the demand for non-standard equipment falls over time.

Chapter 1

Introduction

1.1 This review

The Australian Government Department of Communications, Information Technology and the Arts (DCITA) has commissioned this review in order to gather information about and assess the cost and the effectiveness of the current arrangements for providing telecommunications equipment to consumers with disabilities, and key issues for the next five to ten years. Arrangements for ensuring consumers with disabilities have access to the Standard Telephone Service (STS) have been in place since 1997.[2]

The STS is defined in section 6 of the *Telecommunications (Consumer Protection and Service Standards) (TCPSS) Act 1999* as a carriage service for each of the following purposes:

- voice telephony;
- a form of communication supplied in order to comply with the *Disability Discrimination Act 1992* (*DDA*) when voice telephony is not practical for a particular user with a disability (e.g. because the user has a hearing impairment) and another form of communication that is equivalent to voice telephony (e.g. communication by means of a teletypewriter) is required;
- a purpose designated by the relevant regulations.[3]

Features of a STS, that is, a basic fixed phone line, include:

- local, national and international calls;
- 24-hour access to the emergency call service number;
- operator assisted services; and
- itemised billing, including itemised local calls on request.[4]

Under the Universal Service Obligation (USO), all Australians are guaranteed access to a STS. This guarantee is specified in the *Telecommunications (Consumer Protection and Service Standards) Act 1999* (*TCPSS Act*).

For the purposes of the *TCPSS Act*, the USO 'is the obligation:

(a) to ensure that standard telephone services are reasonably accessible to all people in Australia on an equitable basis, wherever they reside or carry on business; and

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2 Australian Government Department of Communications, Information Technology and the Arts 2006, *Request for Tender no, DCON/05/221*, Canberra.

3 *Telecommunications (Consumer Protection and Service Standards) Act 1999*, http://www.austlii.edu.au/au/legis/cth/consol_act/tpassa1999620, accessed on 21 March 2006.

4 Australian Government Department of Communications, Information Technology and the Arts 2006, *Consumer Safeguards: Fact Sheet*, http://www.dcita.gov.au/__data/assets/pdf_file/30298/FACT_SHEET_consumer_safeguards.pdf, accessed on 22 June 2006.

(b) to ensure that payphones are reasonably accessible to all people in Australia on an equitable basis, wherever they reside or carry on business; and

(c) to ensure that prescribed carriage services are reasonably accessible to all people in Australia on an equitable basis, wherever they reside or carry on business'.[5]

Section 12 of the *TCPSS Act* gives the Minister the power to designate a universal service provider (USP) with the primary responsibility of delivering the USO. Telstra is the current USP, although the legislation allows the Minister to declare two or more carriers as USPs, or regional service providers, with appropriately limited responsibilities.[6]

The *TCPSS Act* also contains a number of other safeguards for Australian telecommunications customers such as the National Relay Service (NRS), the Telecommunications Industry Ombudsman (TIO) Scheme, the Customer Service Guarantee, price control arrangements for Telstra and continued access to untimed local calls. [7]

Nevertheless, the *Telecommunications Act 1997* is relevant to this review, as it specifies the standards relating to customer equipment, and requires that the performance of carriers be reported annually by the Australian Communications and Media Authority (ACMA) to the Minister for Communications, Information Technology and the Arts. These reports include consumer satisfaction, consumer benefits and quality of service.[8]

For the purposes of this review, it is important to note that these initiatives specify the minimum acceptable standard of service that should be available to *all* Australians. This includes people who live in rural or remote areas, people on low incomes, and people who are unable to use standard equipment. The focus of the current arrangements is on ensuring that all Australians have reasonable and equitable access to a STS, or a fixed-line service. For people with disabilities, the USO is met through the provision of non-standard equipment, in order for them to be able to access the STS on a comparable basis as other consumers.

Since the provisions were put in place, there have been a number of changes in the way that telecommunications equipment and services are used in Australia. The take-up of mobile phones, email and the Internet has increased over the last ten years. Air travel reservations, bank transactions and hotel bookings can all be conducted over the Internet. Mobile phones have increased their functionality, and in addition to being able to make calls and send short text messages, they can now be used to send still and moving pictures. The third generation of mobile phones can also be used to send instant messages, and to make video calls.

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5 Telecommunications *(Consumer Protection and Service Standards) Act 1999*, http://www.austlii.edu.au/au/legis/cth/consol_act/tpassa1999620/s9.html, accessed on 31 July 2006.

6 K. Jackson 2000, *The Telecommunications Universal Service Obligation (USO) E-Brief*, issued 26 September, http://www.aph.gov.au/library/intguide/SP/uso.htm#top, accessed on 22 February 2006.

7 These safeguards were repealed from the Telecommunications Act 1997 and the Telstra Corporation Act 1992, and incorporated in the TCPSS Act.

8 Australian Communications and Media Authority 2005, *Telecommunications Performance Report: 2004-05*, Melbourne, p. 1.

Many of these new types of equipment and services are standard products that can be used by consumers with disabilities without the need for non-standard or specialised equipment. Examples include the use of the short message service (SMS) function on mobile phones, email or instant messaging by people who are deaf or hearing impaired. Other forms of communication cannot easily be used by persons with a disability in the absence of non-standard or specialised equipment/software. Examples include neck loops or induction plates that enable someone with a hearing aid to use a mobile phone, voice recognition software for people who are mobility or dexterity impaired, screen reader software for people who are vision impaired or blind, and Braille displays for people who are blind.

This report presents information about the current arrangements for the provision of telecommunications equipment to consumers with disabilities, as well as findings on the extent to which these arrangements are meeting the current and medium term requirements of these consumers. It also examines the impacts that technological advances and the introduction of products and services are likely to have on the demand for telecommunications disability equipment.

1.2 Review objectives

This review assesses the extent to which the current arrangements for the provision of telecommunications disability equipment are effective in meeting the needs and requirements of consumers with a disability, estimates the costs associated with delivering the equipment service to consumers, and identifies key issues that will affect the future supply of and demand for disability equipment. The review's terms of reference, as well as the chapters of this report in which they are addressed, are shown in Table 1.1.

1.3 Review methodology

This review was oversighted by a steering committee, which was made up of members from the DCITA and the ACMA.

The project team conducted a literature review for existing research related to the needs of consumers with disabilities, telecommunications issues, and arrangements in other countries. This included:

- a review of relevant legislation and regulations in Australia, including self regulation where relevant;
- recent Australian and international reports;
- data from the Australian Bureau of Statistics (ABS), and the Australian Institute for Health and Welfare (AIHW); and
- information from the carriers, the Australian Communication Exchange (ACE), and groups representing people with disabilities.

A list of the key sources consulted is provided in Appendix A.

Table 1.1

REVIEW TERMS OF REFERENCE

The consultant is required to examine and report findings on:	Report chapter
(a) Effectiveness of current arrangements	
(i) Having regard to the current regulatory and self-regulatory arrangements for the provision of telecommunications equipment to people with a disability, examine the effectiveness of these arrangements in meeting the requirements and needs of consumers with a disability.	Chapter 2 and Chapter 3
(ii) Examine international arrangements for the provision of telecommunications equipment to consumers with a disability and compare these with the arrangements in place in Australia.	Chapter 4
(iii) Consult with consumers, including potential consumers, of disability equipment services to determine their awareness of, experiences with and attitudes towards the current equipment programs available to them and their requirements for access to new and emerging technologies and services over the next 5-10 years.	Chapter 5 and Chapter 6
(b) Key issues for the future	
(i)Examine current research into new and emerging digital telecommunications technologies that could provide improved access for people with disabilities to telecommunications services. This should include consideration of equipment connectivity and compatibility issues, the suitability of specialised equipment, such as TTY, to meet the needs of people with disabilities, emerging technologies such as multimedia and VoIP applications, and access to other services including mobile phone and Internet services.	Chapter 7
(ii) Examine the likely demand over the next 5-10 years for access to telecommunications customer premises equipment obtained through disability equipment programs. This should include emerging areas of need such as the aging population, Indigenous communities and people living in non-urban areas. The impact of any proposed alternative arrangements on industry and government should also be identified.	Chapter 8
(c) Cost of existing carrier disability equipment programs	
(i) Conduct an assessment of the estimated annual and per capita cost of delivering the disability equipment service to consumers under the current regulatory and self-regulatory arrangements, and any proposed alternative arrangements.	Chapter 9

The project team also sought the views of relevant stakeholders, including consumers, disability and advocacy groups, suppliers of equipment and services, and regulators (see Appendix B). Meetings were held with key government agencies, carriers, industry associations, and representatives of disability groups. These meetings sought information on experiences with the current Disability Equipment Programs (DEP) of different carriers, and on the effectiveness of current arrangements to meet the telecommunications needs of consumers with disabilities.

As required for this review,[9] the project team established eight focus groups of around eight members each, comprising representatives of key disability organisations and relevant individuals, meeting in both metropolitan and regional areas. Focus groups with people with disabilities and their carers were convened in Melbourne, Sydney, Hobart, Mildura, Coffs Harbour, Brisbane, Townsville and Perth. The purpose of the focus groups was to gain first-hand knowledge of consumer experiences with the current equipment arrangements and to discuss how the advent of new services might impact on current arrangements.

In total, some 64 participants attended the focus group discussions to talk about their experiences with and knowledge of the current equipment arrangements. Focus group participants represented only a small sample of actual and likely users of telecommunications disability equipment. Additionally, without better information about disability in Australia, it is difficult to judge how representative the sample was.

Nevertheless, the focus groups included people with a wide range of disabilities and varying levels of impairment. This enabled the focus groups to provide a broad perspective on questions about the use and effectiveness of communications equipment, as well as to provide a general understanding of some of the relevant issues. Participants were generous in sharing their time and their experiences with the focus groups, and in thinking about some of the factors that they believed would drive future telecommunications needs for consumers with disabilities. Further detail about the focus groups is provided in Appendix C.

1.4 This report

This report contains the findings of the review. It also includes some of the suggestions that stakeholders made in relation to the current arrangements and their preferences for the future. This report is structured as follows:

- Chapter 2 describes the current regulatory and self-regulatory arrangements for the provision of telecommunications equipment to people with a disability.
- Chapter 3 examines the effectiveness of the current arrangements in meeting the requirements and needs of consumers with a disability;
- Chapter 4 examines the international arrangements for the provision of telecommunications equipment to consumers with a disability and compares these with the arrangements in place in Australia;
- Chapter 5 presents findings on consumer, including potential consumers, views of disability equipment services, and their awareness of, experiences with and attitudes towards the current equipment programs available to them
- Chapter 6 presents findings on consumer, including potential consumers, views requirements for access to new and emerging technologies and services over the next 5-10 years;

[9] Australian Government Department of Communications, Information Technology and the Arts 2006, *Request for Tender no, DCON/05/221*, Canberra.

- Chapter 7 examines current research into new and emerging digital telecommunications technologies that could provide improved access for people disabilities to telecommunications services, including considerations of equipment connectivity and compatibility issues, the suitability of specialised equipment, such as teletypewriters (TTYs), to meet the needs of people with disabilities, emerging technologies such as multimedia and Voice Over Internet Protocol (VoIP) applications, and access to other services including mobile phone and Internet services;
- Chapter 8 examines the likely demand over the next 5-10 years for access to telecommunications customer premises equipment obtained through disability equipment programs, including emerging areas of need such as the ageing population, Indigenous communities and people living in non-urban areas; and
- Chapter 9 presents an assessment of the cost of existing carrier disability equipment programs under the current regulatory and self-regulatory arrangements, as well the proposed alternatives.

There are also a number of appendices to this report:

- Appendix A is a list of sources referred to in this report;
- Appendix B is a list of the stakeholders consulted for this review; and
- Appendix C provides information about the focus groups that were conducted such as where they were held, who attended, and some of the issues raised.

Chapter 2

The current arrangements

This chapter partly addresses term of reference a (i). It describes the current regulatory and self-regulatory arrangements for the provision of telecommunications equipment to people with a disability.

In 2003, around 4 million Australians had a disability — some more than one. Of these 4 million, around 206 600 Australians required assistance from a carer in order to communicate, and around 893 000 Australians used an assistive device for their communication needs.[10] There is a significant group of individuals who potentially require telecommunications disability equipment — non-standard equipment designed to assist someone with a disability to independently access telecommunications, such as the STS, mobile phones, and the Internet.

As discussed in chapter 1, the USO requires that all Australians should have reasonable access to a STS and payphones on an equitable basis, regardless of where they reside or carry on business. The USO is set out in the *Telecommunications (Consumer Protection and Service Standards) Act 1999* (*TCPSS Act*), and the *TCPSS Act* also defines a number of additional consumer safeguards (see the Parliamentary Library summary in Box 2.1).

Box 2.1

CONSUMER SAFEGUARDS DEFINED IN THE TCPSS ACT

These safeguards include:

- the Universal Service regime;
- the National Relay Service (this provides the deaf or hearing impaired with access to a standard telephone service);
- the Customer Service Guarantee (CSG). The CSG was introduced by the *Telstra (Dilution of Public Ownership) Act 1996* as an additional safeguard for consumers. The CSG provisions were re-enacted in the *Telecommunications Act 1997* and essentially provide for the Australian Communications Authority (ACA, now ACMA) to determine performance standards for carriers. These standards relate to such matters as connection and fault rectification times and the keeping of appointments with customers. If a carrier fails to meet a standard then it is liable to pay compensation to the customer in accordance with a scale determined by the ACMA;
- the Telecommunications Industry Ombudsman (TIO) scheme. This requires providers to enter into a scheme, which allows the TIO to investigate and make determinations about complaints by consumers; and
- the price control arrangements for Telstra and continued access to untimed local calls.

Source: K. Jackson 2000, *The Telecommunications Universal Service Obligation (USO) E-Brief*, issued 26 September, http://www.aph.gov.au/library/intguide/SP/uso.htm#top, accessed on 22 February 2006.

[10] Australian Bureau of Statistics 2004, Disability, Ageing and Carers: Summary of findings, Australia, AusInfo, Canberra.

Some consumers are unable to access the STS using a standard handset. For example, someone who is deaf, hearing impaired or speech impaired may not be able to hear or speak well enough to use a standard handset. Someone who is mobility impaired might not be able to pick up the handset or dial the numbers that they need to. For these consumers, the current arrangements provide for non-standard telecommunications equipment to be made available on the same basis as the standard equipment. Legislation and regulations that are particularly relevant to the telecommunications needs of consumers with disabilities include:

- *Disability Discrimination Act (DDA) 1992*; and
- *Telecommunications (Equipment for the Disabled) Regulations 1998*.

2.1 Background

The above legislation and regulations are necessary to ensure that consumers with disabilities have reasonable and equitable access to the STS, because non-standard equipment is more expensive than standard equipment. For example, a Uniphone™, which is a particular type of teletypewriter (TTY) used by people who are deaf, hard of hearing, or speech impaired to communicate by allowing them to type text messages, can cost nearly ten times as much as a standard handset. A Braille-TTY costs nearly 20 times the price of a Uniphone™. As a result, there is no commercial incentive for carriers to purchase non-standard equipment at full cost to themselves, while offering it to their customers at the same rate as a standard handset.

Neither the *TCPSS Act* nor the *Telecommunications Act 1997* requires carriers (other than Telstra as the USP) to provide equipment that allows comparable access to a STS. This obligation is stated in Section 24 of the *DDA*. The *DDA*, which is enforced by the Human Rights and Equal Opportunity Commission (HREOC), obliges *all* telecommunications carriers that provide goods and services to customers to provide them to people with disabilities on a non-discriminatory basis (including price), except where this would result in unjustifiable hardship on the provider.[11] Carriers that do not offer their customers a standard handset together with a STS are not subject to this obligation. The manner in which the equipment is to be provided to customers is not specified in the legislation. Currently, Telstra and Optus operate disability equipment programs, which provide equipment and aids that are designed to assist people with disabilities to independently access the STS. Other carriers meet their obligations under the *DDA* by obtaining equipment through Telstra Wholesale, or an alternative source, and making it available to their customers.

In 1995, Geoffrey Scott lodged a complaint against Telstra under the *DDA*, arguing that he was denied access to a STS as he was deaf, and could not use the standard rental telephone (for more information, see Box 2.2). The complaint was heard by HREOC, in conjunction with a similar complaint, launched on behalf of all deaf and hearing-impaired Australians by the [then] Disabled Peoples' International against Telstra and the Australian Government.[12]

[11] Australian Government Department of Communications, Information Technology and the Arts 2005, *Overview of disability issues*, http://www.dcita.gov.au/tel/access_for_people_with_disabilities/overview_of_disability_issues#sts, accessed on 11 May 2005.

[12] The complaint against the Australian Government was subsequently dropped.

The ruling in the Scott v. Telstra case upheld the complaint that Telstra had discriminated against profoundly deaf people by not supplying subsidised TTYs. The ruling in the AAD and Disabled Peoples International v. Telstra case provided the remedies for the Scott v. Telstra case — a requirement to provide equipment to enable deaf people to access the STS. This was initially implemented through a voucher scheme.[13] The voucher scheme is no longer in operation — Telstra and Optus now offer TTYs as part of their DEPs.

Box 2.2

SCOTT V TELSTRA

The *Telecommunications Act 1997* included a specific reference to teletypewriters (TTYs), including them as an addition to the definition of the Universal Service Obligation (USO)… The HREOC inquiry…can be regarded as a watershed development in telecommunication policy. The inquiry revolved around the respective providence of the *Telecommunications Act 1991* and the *Disability Discrimination Act 1992*. The two pieces of legislation arose from very different socio-political contexts. One relates to the regulation of telecommunications in relation to the broad national interest. The other legislation seeks to protect the rights of a specific social group. Scott versus Telstra saw the collision between the two pieces of legislation and the paradigms that underpinned them.

Prior to the HREOC decision, Telstra argued consistently that the teletypewriter was non-standard telecommunication equipment that should be provided by government social welfare departments or consumers themselves. In contrast, community groups maintained that TTY equipment was a part of Telstra's universal service obligation to the community.

Source: M. Bourk 1999, *Scott versus Telstra: A Watershed in the Development of Telecommunication Policy,* http://www.dcita.gov.au/crf/paper99/bourk.html, accessed on 12 May 2006

In addition to the legislation referred to above, there are a number of regulations that are relevant to the provision of telecommunications disability equipment to consumers with a disability. An overview of these arrangements, as well as the Acts described, is provided in Table 2.1. Overall, the legislated and regulated arrangements provide for consumers with disabilities to access the STS. The extent to which these arrangements are effective, equitable, or meet the needs and requirements of consumers with disabilities is discussed in subsequent chapters.

2.2 Legislation

Disability Discrimination Act 1992

The *DDA*'s objectives (see Box 2.3) are to make discrimination on the grounds of disability unlawful, as well as to promote understanding and acceptance of the rights of people with disabilities. The *DDA* provides the basic principles, and is referenced in telecommunications legislation, on the right of access by people with disabilities to telecommunications equipment and services.[14]

[13] HREOC 2006, *Disability Rights*, http://www.hreoc.gov.au/disability_rights/decisions/comdec/comdec.html#otherdet, accessed 11 May 2006.

[14] W. Jolley 2003, *When the Tide Comes In: Towards Accessible Telecommunications for People with Disabilities in Australia*, discussion paper commissioned by the Human Rights and Equal Opportunity Commission, June, p. vi.

Table 2.1

LEGISLATION AND REGULATION GOVERNING ACCESS TO TELECOMMUNICATIONS FOR PEOPLE WITH A DISABILITY

IMPACTS	Disability Discrimination Act 1992	Telecommunications Act 1997	Telecommunications (Consumer Protection and Service Standards) Act 1999	Telecommunications (Equipment for the Disabled) Regulations *1998*	Telecommunications Disability Standard	Guideline for Access to Telecommunications For People with Disabilities
Places						
Access to facilities	4		4			
Behaviours						
Access to information						4
Access to standard services	4		4	4		4
Minimum service levels			4			
Prevents discrimination	4					
Consultation regarding equipment standards		4				
Equipment						
Access to equipment (goods)	4		4	4		
Type of equipment to be provided				4		
Customer equipment standards		4			4	4
Oversight body						
DCITA		4	4	4		
ACMA		4	4	4		
Industry body					4	4
Other	4					

HREOC, which is an independent statutory organisation and which reports to the Commonwealth Parliament through the Attorney General, enforces the *DDA*. One of HREOC's responsibilities is to hear discrimination and human rights complaints, which are brought to it by individuals or organisations. The complaint is then reviewed to decide if it should be terminated or if it is suitable for further action.

The implications of the *DDA* for carriers are that all providers must supply goods and services to people with disabilities on a non-discriminatory basis (including price), except where this would result in unjustifiable hardship for the provider. In relation to telecommunications equipment and the STS, only carriers that provide equipment with the service are obliged to make arrangements for telecommunications disability equipment for customers that require it[15] — unless, of course, doing so would result in unjustifiable hardship.

Telecommunications Act 1997

The main object of the *Telecommunications Act 1997*, when read together with Parts XIB and XIC of the *Trade Practices Act 1974*, is to provide a regulatory framework that promotes:

- the long term interests of end users of carriage services or of services provided by means of carriage services; and
- the efficiency and international competitiveness of the Australian telecommunications industry.

The Act also specifies the standards relating to customer equipment in Division 4, particularly Sections 380, 382 and 383 (see Box 2.4). Section 383 is the only one that references the DDA.

Telecommunications (Consumer Protection and Service Standards) Act 1999

The *TCPSS Act*, which restates the range of safeguards for telecommunications consumers that were contained in the *Telecommunications Act 1997* and the *Telstra Corporation Act 1991*, including:

- the Universal Service Obligation (USO);
- the National Relay Service (NRS);
- the Customer Service Guarantee (CSG);
- the Telecommunications Industry Ombudsman (TIO) scheme; and
- the price control arrangements for Telstra and continued access to un-timed local calls.[16]

The Universal Service Obligation

Sections 6 and 9 of the TCPSS Act are particularly relevant to the provision of telecommunications disability equipment to consumers with a disability, as they define the scope of the USO. Currently, the USO ensures that all Australians have reasonable access to the STS and payphones regardless of where they live or carry on business. As the primary USP, Telstra must ensure that the USO is met. The supply of a STS includes providing customers with access to an efficient and reliable telephone service, good voice reception and responsive fault repair.[17]

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15 Australian Government Department of Communications, Information Technology and the Arts 2006, *FAQ - Consumer rights and benefits - disability issues*, http://www.dcita.gov.au/tel/access_for_people_with_disabilities/frequently_asked_questions/faq_-_consumer_rights_and_benefits_-_disability_issues, accessed 11 May 2006.

16 K. Jackson 2000, *The Telecommunications Universal Service Obligation (USO) E-Brief*, issued 26 September, www.aph.gov.au/library/intguide/SP/uso.htm#top, accessed on 22 February 2006.

17 Telstra 2001, *Telstra's Universal Service Obligation Standard Marketing Plan*, Melbourne, p. 3.

Box 2.3

DISABILITY DISCRIMINATION ACT 1992

Section 3 defines the DDA's objects as being:

- 'to eliminate, as far as possible, discrimination against persons on the ground of disability in the areas of:
  - work, accommodation, education, access to premises, clubs and sport; and
  - the provision of goods, facilities, services and land; and
  - existing laws; and
  - the administration of Commonwealth laws and programs; and
- to ensure, as far as practicable, that persons with disabilities have the same rights to equality before the law as the rest of the community; and
- to promote recognition and acceptance within the community of the principle that persons with disabilities have the same fundamental rights as the rest of the community'.

Section 5 (1) of the DDA states that, for the purposes of this Act, a person (**discriminator**) discriminates against another person (**aggrieved person**) on the ground of a disability of the aggrieved person if, because of the aggrieved person's disability, the discriminator treats or proposes to treat the aggrieved person less favourably than, in circumstances that are the same or are not materially different, the discriminator treats or would treat a person without the disability.

Section 6 states that, for the purposes of this Act, a person (**discriminator**) discriminates against another person (**aggrieved person**) on the ground of a disability of the aggrieved person if the discriminator requires the aggrieved person to comply with a requirement or condition:

- with which a substantially higher proportion of persons without the disability comply or are able to comply; and
- which is not reasonable having regard to the circumstances of the case; and
- with which the aggrieved person does not or is not able to comply.

Section 11 of the DDA introduces the concept of 'unjustifiable hardship', which is determined by considering:

- 'the nature of the benefit or detriment likely to accrue or be suffered by any persons concerned; and
- the effect of the disability of a person concerned; and
- the financial circumstances and the estimated amount of expenditure required to be made by the person claiming unjustifiable hardship; and
- in the case of the provision of services, or the making available of facilities—an action plan given to the Commission under **Section 64**.

Finally, under **Section 24 (1)** of the DDA, '[i]t is unlawful for a person…to discriminate against another person on the ground of the other person's disability or a disability of any of that other person's associates:

- by refusing to provide the other person with those goods or services or to make those facilities available to the other person; or
- in the terms or conditions on which the first mentioned person provides the other person with those goods or services or makes those facilities available to the other person; or
- in the manner in which the first mentioned person provides the other person with those goods or services or makes those facilities available to the other person'.

An exception is made for **Section 24** for instances in which compliance would result in unjustifiable hardship.

Source: *Disability Discrimination Act 1992,* http://www.austlii.edu.au/au/legis/cth/consol_act/dda1992264/, accessed on 21 May 2006.

Box 2.4

TELECOMMUNICATIONS ACT 1997 — DIVISION 4

Section 380 provides for ACMA to make a standard relating to specific customer equipment if:

- the customer equipment is for use in connection with the standard telephone service; and
- the customer equipment is for use primarily by persons who do not have a disability; and
- the standard relates to the features of the equipment that are designed to cater for any or all of the special needs of persons with disabilities.

Examples given in **Section 380** of features that are designed to cater for the needs of persons with disabilities are:

- an induction loop that is designed to assist in the operation of a hearing aid;
- a raised dot on the key labelled "5" on a telephone.

Section 382 requires that before making a standard under section 380, the ACMA must, so far as is practicable, try to ensure that:

- interested persons have had an adequate opportunity to make representations about the proposed standard either directly, or indirectly by means of a report under paragraph (2)(g); and
- due consideration has been given to any representation so made.

Section 383 specifies that, in determining whether a person has infringed **Section 24** of the *Disability Discrimination Act 1992* in relation to the supply or provision of customer equipment, regard must be had to whether the customer equipment complies with a standard in force under **Section 380**, but other matters can be taken into account as well.

Source: *Telecommunications Act 1997,* http://www.austlii.edu.au/au/legis/cth/consol_act/ta1997214/, accessed on 21 May 2006.

Telstra is considered to have fulfilled its USO by supplying and maintaining a STS to a customer at each place of residence or place of business, if that STS is reasonably accessible to persons other than the customer reasonably requiring the use of that service in that property or place.[18] Telstra also has a Standard Marketing Plan, which describes the STS and payphone service that Telstra will supply throughout Australia in fulfilment of the USO.

The National Relay Service

Part 3 of the *TCPSS Act* establishes the NRS, which enables people who are deaf or have a hearing and/or speech impairment to access a STS on terms, and in circumstances, that are comparable to the access that other Australians enjoy.[19] The service involves communication of telephone or TTY messages through a relay officer. The NRS also provides a speech-to-speech relay service, which allows people with a speech impairment to have their messages relayed through specially trained relay officers, and a 106 text emergency service, which allows TTY users to contact the emergency services through TTY or modem.

The NRS relays telephone messages in a number of ways:

[18] Telstra 2001, *Telstra's Universal Service Obligation Standard Marketing Plan*, Melbourne, p. 3.

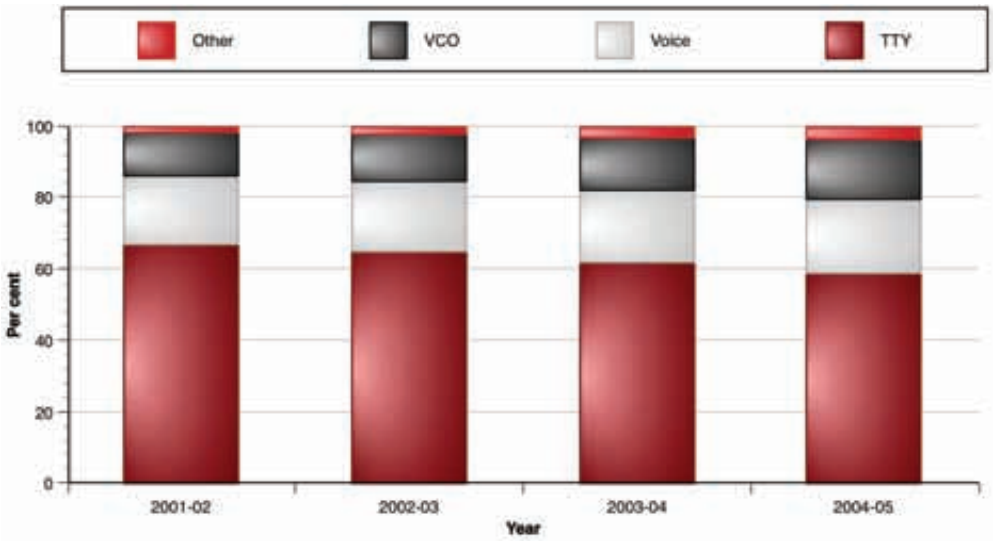
[19] Australian Communications and Media Authority 2005, *Telecommunications Performance Report 2004 05*, Melbourne, p. 51.

- text–based communications — using a TTY or modem, people type in their side of the conversation, and the text is spoken by an operator at the NRS to the recipient of the call, or vice versa;
- voice carry over (VCO) — people who are hearing impaired and able to speak, use their voice to communicate and read the response on their TTY;
- VCO to VCO— this enables two people who are hearing impaired and able to speak to communicate with one another in the above manner;
- hearing carry over (HCO) — people who are speech impaired and able to hear can listen to a voice conversation, and enter their response using a TTY; and
- speech-to-speech relay — this enables two people who are speech impaired and able to hear to communicate with one another using their own voice or voice output device.

Currently, Internet Relay is not available in Australia, however it will be introduced in 2007.[20] In 2004-05, the majority of calls to the NRS were made using a TTY or modem (59.8 per cent). This has declined from 67.5 per cent of calls in 2001-02. Figure 2.1 shows that there has been little change in the composition of calls in recent years.

Figure 2.1

INBOUND CALLS TO THE NRS, 2001-02 TO 2004-05



Source: Australian Communications Authority 2005, *Telecommunications Performance Report 2004-05*, Melbourne.

There has also been an overall decline in the number and duration of calls to the NRS. The changes in the pattern of NRS use have been attributed to the increasing market penetration of alternative telecommunication options, such as SMS, instant messaging and email.[21]

[20] Senator the Honourable Helen Coonan 2006, *Media Release: National Relay Service Contract Announced*, http://www.minister.dcita.gov.au/media/media_releases/national_relay_service_contract_announced, accessed on 20 June 2006.

[21] Australian Communications Authority 2005, *Telecommunications Performance Report 2004-05*, Melbourne.

Eligible telecommunications carriers are levied to fund the NRS. In 2004-05, Telstra, Optus and Vodafone between them contributed more than 90 per cent of the funding for the NRS, or around $14.7 million.[22]

Currently, the NRS is provided by the Australian Communication Exchange under contract to the Australian Government. ACMA is responsible for monitoring matters relating to the performance of the NRS.

2.3 Regulation

The *Telecommunications (Equipment for the Disabled) Regulations 1998* specify the types of equipment that the USP is obliged to supply to customers with disabilities (see Box 2.5). The types of equipment include — but are not limited to — TTY machines, Braille TTYs, modems, handsets with hearing aid couplers, hands-free telephones, adaptors for people with cochlear implants and telephones with adjustable ring tones and voice amplifiers.

The equipment specified in the regulations is intended to enable people with disabilities to have reasonable access to a STS. While the USP is required to provide access to equipment that meets the objectives specified in the *Telecommunications (Equipment for the Disabled) Regulations 1998,* it is under no obligation to consider the consumer's preference for a certain type of technology to allow equitable access.

[22] Australian Communications and Media Authority 2005, *Telecommunications Performance Report 2004 05*, Melbourne, p. 53.

Box 2.5

TELECOMMUNICATIONS (EQUIPMENT FOR THE DISABLED) REGULATIONS 1998

Section 7 provides that the following customer equipment, that allows a person with a disability to have access to the National Relay Service, to communicate in spite of the disability, is specified:

- equipment which facilitates text to text communication through the telephone network;
- equipment which facilitates data transmission over the telecommunications network;
- equipment which facilitates the transmission of data over the telecommunications network and its transfer into Braille.

Section 8 provides that the following customer equipment, that allows a person with a disability to have access to a standard telephone service, to communicate effectively with a person without a disability, and in spite of the disability, is specified:

- a standard rental telephone handset which includes one-touch dial memory, a lightweight handset and a built-in hearing aid coupler;
- a telephone which amplifies the incoming caller's voice to suit the listener;
- a telephone which amplifies the speaker's voice, allowing the speaker to adjust the speech level to suit the listener;
- a handsfree telephone for a person who cannot hold a telephone;
- an ancillary telecommunications product which has adjustable volume, tone and pitch controls to assist the user to hear the telephone ringing;
- an ancillary telecommunications product which is a visual alert that there is an incoming call;
- an ancillary telecommunications product which allows the connection of a second piece of equipment in parallel with the existing telephone;
- an ancillary telecommunications product in which the telephone handset is cradled, providing handsfree operation;
- a telephone adapting device which allows a person with a cochlear implant to have access to the standard telephone service.

Source: *Telecommunications (Equipment for the Disabled) Regulations 1998,* http://www.austlii.edu.au/au/legis/cth/num_reg/tftdr19981998n133575/, accessed on 21 May 2006.

2.4 Regulators

Australian Communications and Media Authority (ACMA)

ACMA is the telecommunications industry regulator. ACMA's responsibilities include:

- promoting self-regulation and competition in the telecommunications industry, while protecting consumers and other users;
- fostering an environment in which electronic media respect community standards and responds to audience and user needs;
- managing access to the radiofrequency spectrum, including the broadcasting services bands; and
- representing Australia's communications and broadcasting interests internationally.

In addition to its powers under Section 380 of the *Telecommunications Act 1997*, Section 376 allows ACMA to make technical standards in relation to specified customer equipment and customer cabling, as shown in Box 2.6.

Box 2.6

SECTION 376 OF THE TELECOMMUNICATIONS ACT 1997

These standards address four standard heads of power:

- protecting the integrity of a telecommunications network or a facility;
- protecting the health or safety of persons who;
  - operate; or
  - work on; or
  - use services supplied by means of; or
  - are otherwise reasonably likely to a affected by the operation of a telecommunications network or a facility; or
- ensuring that customer equipment can be used to give access to an emergency call service; or
- ensuring, for the purpose of the supply of a STS, the interoperability of customer equipment with a telecommunications network to which the equipment is, or is proposed to be, connected.

Source: *Telecommunications Act 1997,* http://www.austlii.edu.au/au/legis/cth/consol_act/ta1997214/, accessed on 21 May 2006.

Organisations that represent sections of the industry may develop industry codes and register these with ACMA. Unless ACMA requires it, compliance with such codes is voluntary. ACMA retains a reserve power to make standards, where codes are deficient or do not exist, and compliance with these standards is mandatory (see Box 2.7 for more information).

Box 2.7

CODE DEVELOPMENT AND CODE SIGNATORIES

Part 6 of the *Telecommunications Act 1997* sets out arrangements for the development, registration and enforceability of industry codes. This gives effect to Parliament's intention that organisations representing sections of the telecommunications industry should develop codes of practice applying to the telecommunications activities of participants in their particular section.

The Australian Communications Industry Forum (ACIF) has been the main industry body overseeing the development of codes, but in the past two years other organisations have developed codes. Industry bodies can develop codes of their own volition, or they may be requested by ACMA to do so.

ACMA may register an industry code, following which it can direct any participant in the telecommunications industry to comply with the code. Compliance with an industry code is voluntary unless a participant is so directed by ACMA.

Under procedures developed by industry bodies such as ACIF, individual industry participants may become a signatory to a registered code, which is a public attestation of their endorsement of the code. Signatories are normally bound by any compliance regime of their industry body, if such a regime is in force. ACIF, for example, has developed a codes compliance scheme. Each year, ACMA collects information from non-signatories to codes about the extent of their voluntary compliance with specific code provisions (see this chapter under Compliance with registered codes).

Before registering a code, ACMA must be satisfied that the industry body has consulted the TIO, the Privacy Commissioner where codes deal with privacy issues, the ACCC and a representative consumer body. ACMA must also be satisfied that the code reflects the Parliament's intention that public interest — particularly community safeguards — be addressed in a way that does not impose undue financial and administrative burdens on the telecommunications industry.

Source: Australian Communications and Media Authority 2005, *Telecommunications Performance Report 2004-05,* Melbourne, p. 126.

In February 2002, the now Australian Communications and Media Authority (ACMA, then the Australian Communications Authority), agreed to adopt 'Telecommunications Disability Standard (Requirements for Customer Equipment for use with the Standard Telephone Service — Features for special needs of persons with disabilities — AS/ACIF S040) 2002' under Section 380 of the *Telecommunications Act 1997*.

This standard was developed by Australian Communications Industry Forum (ACIF) and applies to certain customer equipment that uses a telephone handset or a keypad that is manufactured in, or imported into Australia for use with a STS. This standard defines the technical requirements relating to the features of the equipment that is designed to cater for the particular needs of persons with disabilities. Requirements of the standard are essentially that:

- the magnetic field radiated from handset shall be compatible with hearing aids; and
- communications equipment shall have a raised 'pip' on, or in the vicinity of, the key associated with the digit '5' on the keypad.

Telecommunications Industry Ombudsman (TIO)

Part 6 of the *TCPSS Act* sets out the Telecommunications Industry Ombudsman (TIO) Scheme. Each carrier and each eligible carriage service provider must enter into the TIO scheme, where eligible service providers are those companies whose customers are residential and small business consumers who purchase STSs, public mobile telephone services or Internet connectivity. The TIO scheme provides for the Ombudsman to investigate, make determinations relating to, or give directions relating to complaints made by customers about carriage services. The TIO scheme is funded by the telecommunications industry.

The TIO can investigate complaints about the supply of disability equipment by the USP, currently Telstra. The TIO will also consider complaints where the equipment provided may not suit the person's disability, or where additional equipment is required to utilise a service but has not been supplied by a provider.

Australian Competition and Consumer Commission (ACCC)

The ACCC also has some responsibilities under the *Telecommunications Act 1997* and other related legislation, including in relation to price control of Telstra's retail services, international conduct rules, number portability, electronic addressing, interconnection standards and arbitration of disputes about access to network information, access to facilities, operator services, directory assistance services, provision of number portability, preselection, emergency call services and carriage services for use by the Defence forces.

2.5 Industry self-regulation

Australian Communications Industry Forum (ACIF)

ACIF is an industry-funded body that develops industry codes and standards for the communications industry. ACIF has a Disability Advisory Body (DAB), which provides professional advice to ACIF regarding the implications for telecommunications consumers with disabilities of ACIF's proposed Codes and Standards. Box 2.8 provides information about the members of the DAB, showing the breadth of representation. The advice is provided at the project proposal stage of each new Code and Standard. The DAB advises on the extent of the disability implications according to the following impact scale:

- high — widespread implications for consumers with disabilities over and above those experienced by other consumers, warranting specific provisions in the Code/Standard;
- medium — moderate implications for consumers with disabilities over and above those experienced by other consumers, warranting consideration of disability needs in the Code/Standard; and
- low — negligible implications for consumers with disabilities over and above those experienced by other consumers, and not warranting specific consideration in drafting of the Code/Standard.

Box 2.8

MEMBERSHIP OF ACIF'S DISABILITY ADVISORY BODY

Dr Christopher Newell — CJ Newell Consulting, Chair;
Andrew Wiltshire — Australian Association of the Deaf;
Tony Starkey — Blind Citizens Australia;
Andrew Stewart — Deafness Forum of Australia;
Harold Hartfield — Physical Disability Council of Australia;
Rob Garrett — Australian Rehabilitation and Assistive Technology Association;
Gunela Astbrink — Telecommunications and Disability Consumer Representation;
Sue Salthouse — Women With Disabilities Australia; and
Loretta Kreet — National Council on Intellectual Disabilities.

Source: Australian Communications Industry Forum 2006, *Projects and Activities,* http://www.acif.org.au/projects/disability/membership, accessed 20 March 2006.

The DAB also provides professional advice as to appropriate methods of consultation/involvement in the development of ACIF Codes and Standards. In 2001 the DAB assisted ACIF to develop ACIF Guideline G586:2001, which is a guideline that addresses access to telecommunications for people with disabilities (see Box 2.9 for more information).[23] This guideline was developed with the following aims:

[23] Australian Communications Industry Forum 2001, *ACIF G586:2001 Access to Telecommunications For People with Disabilities*, Sydney.

- to assist ACIF and its Reference Panels and Working Committees to meet their responsibilities under the *Disability Discrimination Act 1992* and the *Telecommunications (Consumer Protection and Service Standards) Act 1999*; and
- to assist ACIF and its Reference Panels and Working Committees to provide equity in access to telecommunications for people with disabilities.

ACIF Guideline G586:2001 is to be applied in the development of all ACIF Codes and Standards. It does not preclude the inclusion of other specific accessibility requirements as needed nor does it substitute any obligation that industry participants must comply with under legislation.

ACIF has developed Code C521:2004 to provide a minimum set of standards for service providers to meet when providing information to consumers about the prices, terms and conditions of the products on offer. This Code establishes rules that must be heeded by service providers as well as providing specific guidance and obligations regarding advertising, pre-sale and contractual information provided to consumers. The timing of the provision of information is also important if consumers are to make informed purchasing decisions. This Code has been written to address issues of when information is provided as well as the style and scope of information provided and the manner in which it is provided.[24]

Specifically in relation to the provision of equipment, ACIF's Code C625:2005 provides a minimum set of standards for the provision of information on accessibility features of telephone equipment. The objective of the Code is to:

> provide useful information to CSPs to assist them in guiding consumers to choose the most appropriate telecommunications equipment to meet their specific needs. The Code will also ensure that consumers can approach equipment suppliers directly for information on equipment features that will meet that consumer's communications needs.[25]

This Code is registered by ACMA, allowing ACMA to enforce these obligations on manufacturers and importers of telecommunications equipment, requiring them to provide the necessary information to CSPs, as well as to any consumers that contact them directly.

Thus, carriage service providers should be in a position to provide information about the features of equipment that are particularly important for customers with a disability. Not all retailers of telecommunications equipment are carriage service providers and would not automatically be provided with the information on product features. Equipment suppliers must also have a contact point for consumers who wish to seek further information about the equipment supplier's particular equipment features.

[24] Australian Communications Industry Forum 2004, *ACIF C521:2004 Customer Information on Prices Terms and Conditions*, Sydney, pp. i-ii.

[25] Australian Communications Industry Forum 2005, *ACIF C625:2005 Information On Accessibility Features For Telephone Equipment*, Sydney, p. iv.

Codes developed by ACIF are voluntary, the ACIF Code Administration and Compliance Scheme is intended to encourage and enhance industry compliance with its published Codes.[26] Parties to whom a Code is relevant 'sign-up' to a Code by completing ACIF's Code Signatory Agreement Form, which registers their signatory status and intention to comply with the Code. This information is made available on ACIF's website.

Box 2.9

ACIF GUIDELINE G586:2001

The guidelines require that:

- industry codes and standards be drafted and read with reference to the *Disability Discrimination Act 1992*;
- the principles of universal design should be taken into account, where relevant, in the development of codes and standards;
- codes and standards that impact on consumers should be written in plain English, or have available an explanation of the code or standard in plain English. This assists the general population, including people with learning disabilities, and people from non-English speaking backgrounds;
- any documentation should be made available in alternative formats upon request e.g. large print and Braille and electronic format. Electronic documentation should be created in such a way that it is accessible to people with disabilities and in particular people with vision impairments;
- the ACIF web site should meet international web accessibility guidelines in a similar way as specified by the Government Online Strategy to ensure ACIF Working Committees and Working Groups can access material on the ACIF website relevant to their task, and to ensure people with disabilities can access ACIF documents which have been released for public comment;
- customer enquiry or assistance lines should include a TTY line for people who are deaf, speech or hearing impaired, and customer enquiry or assistance service operators should receive regular training in the efficient use of a TTY;
- customer service staff should receive regular training in communicating with people with a range of communication needs, including speech impairments;
- customer enquiry or assistance service counters should provide:
  - sign interpretation on request for deaf people;
  - language assistance for community languages; and
  - communication facilitators and a counter loop for the hearing impaired; and
- carriers and carriage service providers should ensure that customers can be easily assisted by an advocate, if required, when communicating with a supplier. An advocate is defined by ACIF as 'an attendant care worker, family member, friend or other person nominated by a customer with a disability, non-English speaking background or other special need to assist the customer. An Advocate is not authorised to make changes to the customer's account or telecommunications services unless they are also nominated by the customer as an Authorised Representative'; and
- when ACIF codes, standards or guidelines mention access to the Emergency '000' number, the TTY Emergency number '106' should also be mentioned.

Source: Australian Communications Industry Forum 2001, *ACIF G586:2001 Access to Telecommunications For People with Disabilities*, Sydney.

[26] Australian Communications Industry Forum 2003, *ACIF G514:2003, ACIF Code Administration and Compliance Scheme*, Sydney.

The extent to which these guidelines and Codes are effective in meeting the needs and requirements of consumers with disabilities are discussed in subsequent chapters.

2.6 Carriers

To facilitate the supply of non-standard handsets to the consumers that need it, Telstra, as the USP, operates a Disability Equipment Program (DEP). The *Telecommunications (Equipment for the Disabled) Regulations 1998* specify the range of equipment that Telstra must offer to consumers with disabilities, to facilitate their access to the STS.[27] Of all of the carriers, Telstra offers the greatest range of equipment and aids for people with disabilities. Examples of some of the equipment that is available to eligible consumers include:

- TTYs for people who are hearing or speech impaired;
- cordless phones for people who are mobility impaired; and
- phones with enlarged buttons for people with limited dexterity, or who are vision impaired.

In 2001, Optus began its own DEP and provides TTYs to consumers in Optus cabled areas in Sydney, Melbourne and Brisbane — all other disability products, and all other Optus customers are addressed through the repackaging of Telstra products purchased through a wholesale arrangement. These wholesale arrangements are also used by those other carriers that do not have a disability equipment program of their own, but that provide a handset as part of their general service to their customers.

Telstra

As the USP, Telstra is obliged to offer equipment that complies with the requirements of the *Telecommunications (Equipment for the Disabled) Regulations 1998.* Of the carriers discussed, Telstra offers the largest range of telecommunications disability equipment.

Telstra sets out how it plans to meet its obligations to all of its consumers (including those with a disability) in its Standard Marketing Plan. This is consistent with Telstra's obligations as the USP:

> required to have a public Policy Statement and Standard Marketing Plan, approved by the industry regulator the Australian Communications and Media Authority (ACMA), setting out in detail how it will fulfil its Universal Service Obligation (USO). The Statement and Plan covers such matters as service availability, service description, service quality, connection and fault repair timeframes and complaint processes.[28]

In its Standard Marketing Plan, Telstra notes the equipment that it currently has on offer, confirming that this equipment meets the *Telecommunications (Equipment for the Disabled) Regulations 1998.* Telstra also refers to the process by which it decides what equipment will be provided, noting:

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[27] Australian Communications and Media Authority 2005, *Telecommunications Performance Report 2004 05*, Melbourne, p. 54.

[28] Australian Government Department of Communications, Information technology and the Arts 2005, *Connecting the telephone and the Universal Service Obligation*, http://www.dcita.gov.au/tel/faqs/consumer_rights_and_benefits/faq_connecting_the_telephone_and_the_universal_service_obligation_uso, accessed on 18 May 2006.

> from time to time, Telstra considers the inclusion or deletion of a piece of disability equipment under its Disability Equipment Program due to feedback received from customers, technological advances, the introduction of new products or the potential that some items of disability equipment may not be manufactured in the future. Telstra will seek the advice of its Disability Equipment Program Consumer Advisory Group in considering any changes to the disability equipment it provides under its program.[29]

To receive equipment through Telstra's DEP, customers must:

- have a disability and be unable to use a standard telephone handset; and
- be a Telstra customer (i.e. obtain basic line rental from Telstra or be an associate of a Telstra customer residing at the same address); and
- complete an application form (available from the Disability Enquiry Hotline) and have it signed by an authorised professional (i.e. a Medical Practitioner, Audiologist, Audiometrist, Ophthalmologist, Optometrist, Occupational Therapist, or Speech Pathologist).

Application forms can be obtained from Telstra shops, Telstra Countrywide area offices, offices of major disability service provider organisations, through Telstra's Disability Enquiry Hotline and from the Telstra website.[30] Telstra Countrywide offices and major disability organisations have been provided with relevant items of equipment so that potential customers can see and try the equipment before sending their application. Customers can also try equipment before they submit application form, through the Disability Enquiry Hotline.

Completed forms can be sent to Telstra by Freepost, or by Freefax, where they are processed. Normally, applicants are contacted within 48 hours to sort out any eligibility issues, to ensure the customer is aware of the options available, and to organise delivery. Telstra delivers equipment other than TTYs within 2-3 working days. Applications assessed as eligible for a TTY are forwarded to Printacall (see Box 2.10), who contact the customer by telephone and letter. This is done within four business days, but usually on the day that the authorisation is received from Telstra. Printacall also stock a number of other assistive aids for people who are hearing impaired, such as add-on equipment for entertainment systems, alarms, and so on. These and some of the items from Telstra's DEP are available for sale.

[29] Telstra 2005, *Telstra's Universal Service Obligation: Standard Marketing Plan*, Melbourne, p. 17.

[30] Telstra 2006, *Disability Services Catalogue*, http://www.telstra.com.au/disability/catalogue/apply.htm, accessed on 21 May 2006.

Box 2.10

PRINTACALL

Telstra sub-contracts Printacall to source, supply, distribute, install and maintain telecommunications disability equipment. Printacall performs this function for Telstra's direct customers, as well as those that are receiving Telstra equipment through a wholesale arrangement.

Printacall helps the customer to choose the TTY equipment required and normally sends this to the customer by registered post (in some cases the customer may collect the equipment). Printacall does this within two working days for customers in metropolitan areas and within four working days for customers in other areas. Printacall also manages data in relation to the equipment and the Telstra customer nationwide and liaise with Telstra and the customer to ensure the customers equipment needs are met.

Printacall and its sub contracted distributors provide in store education and training for the users of the equipment and build relationships with the community in order to promote awareness of the equipment that is available. When equipment needs to be replaced, Printacall aims to manage the changeover in replacement equipment where possible, so that the customer is not without a means of communication. Printacall also sell a range of assistive listening devices and telecommunications disability equipment. Printacall provide full customer service to retail and contracted clients in relation to supply, maintenance and repair of equipment.

Source: Consultations with Telstra and Printacall

Telstra also prepares a Disability Action Plan (DAP) for HREOC, which detail Telstra's strategies for meeting its obligations under the *DDA*. The DAP underpins Telstra's efforts to recognise the needs of people with disabilities and to improve the accessibility of its products and services. Telstra has an internal monitoring and compliance process in place to report on achievements and progress against its current plan, which is subject to formal review. The DAP also contains a commitment by Telstra to regularly analyse disability related complaints to identify causes and to take remedial action. For example, in its third DAP, Telstra recognised the significantly increased ownership of mobile phones and usage of online services, and made a range of new commitments in relation to customers with intellectual disability.

In addition, as part of its general obligations under the *DDA,* Telstra provides, on request, information and resource materials on its initiatives, products and services, and forms and contracts in a variety of accessible formats, including:

- Braille, large print and online;
- CD Rom; or
- MP3 and real audio format.

Telstra also provides billing information in a range of formats including:

- Braille bills;
- big print bills; and
- on-line and electronic billing and payment options.

There are a number of functions that Telstra provides over and above its legislative and regulatory obligations. For example, Telstra provides a number of helplines associated with the provision of equipment. Telstra's Disability Enquiry Hotline provides information about Telstra products, services and information specifically for consumers with a disability. It can be accessed in a number of ways:

- telephone — 1800 068 424;
- TTY — 1800 808 981;
- fax — 1800 814 777; and
- email — DisabilityEnquiryHotline@team.telstra.com.

The other helpline is a Directory Assistance Helpline, which is a live, operator-assisted service that includes telephone number information as well as address information. Calls to Directory Assistance Helpline are free for people who are unable to read, use or hold White Pages™ or Yellow Pages™ directories. Telstra fixed line customers who are unable, or find it extremely difficult to dial numbers on a telephone and therefore are prevented from using a normal telephone, may be eligible for a Telstra Call Connect service fee Disability Exemption,[31] and consumers can apply for the service through Telstra's Disability Enquiry Hotline.

Telstra has a number of consultative processes that inform the development and implementation of its DAP. These include the Disability Forum — which is convened in March and September of each year — and the Disability Equipment Program Consumer Advisory Group — which also meets twice annually and is made up of representatives nominated by peak disability groups. In addition, the Telstra Consumer Consultative Councils include representatives of disability groups. Telstra Consumer Relations also engages regularly with a range of disability groups around Australia through a variety of forums, and Telstra maintains a database of approximately 400 Australian disability groups that participate in receiving regular Telstra information briefs electronically and by printed newsletter. The purpose of gathering this information is to inform the development of initiatives that promote awareness of and access to Telstra's DEP, and to respond to feedback and suggestions from consumer representatives within the disability sector.

Optus

Optus is the only other carrier that offers a disability equipment program. The disability equipment program was launched in 2001. Currently, Optus' equipment list consists of two items — the Superprint and the Uniphone. All other types of equipment (for example, cochlear adaptors, voice-aid phones, Braille TTYs, etc) are provided through Optus' wholesale arrangement with Telstra. Optus customers who are not in one of Optus' directly cabled areas also receive their equipment — including TTYs — through Optus' wholesale arrangement with Telstra.

Optus customers are eligible for equipment from the Optus DEP if:

- they are directly connected to the Optus network;
- they have a legitimate hearing or speech impairment; and

[31] Customers will still be charged the applicable call charges for connection to the requested number.

- a volume control handset is not sufficient for their communication needs.

Optus does not require supporting documentation from its customers in order to justify a non-standard handset. Rather, a customer will contact Optus' general front of house Customer Service to request a TTY handset, and the Customer Service representative will confirm with the customer exactly which type of unit best meets the customers' needs. Optus arranges for the delivery of the TTY, installs the equipment and offers training for the recipient, including informing them about the National Relay Service.

Optus also has its own Disability Action Plan. The Optus DAP was launched in December 1999, and it identifies strategies aimed at removing barriers to access for customers, potential customers and staff. The DAP was developed in consultation with a Working Group comprising disability representatives of the Optus Consumer Liaison Forum. The Working Group has subsequently played an active role in advising on the implementation of strategies and in monitoring progress.

One of the key initiatives implemented under the DAP has been the introduction of a disability equipment solution to ensure equitable access to Optus Local Telephony products — telephone TTY handsets became available in mid-2001 and additional disability handsets were trialled in the latter part of that year.

Other initiatives included the launch of Braille bills for Optus' Local Telephony, Long Distance Telephony and Mobile products; the launch of online billing for Mobile accounts; and Web Accessibility staff training. Optus offers free calls from fixed lines to its Directory Assistance line, for eligible customers. Once a customer registers for this assistance and is approved, they are provided with a 1800 toll free number that provides access to Optus' Directory Assistance. For their direct customers, Optus not only provides for the installation of the TTY, it also appoints a technician to provide the customer with some training about how to use the TTY, how to make calls to standard phones using the TTY, and general maintenance advice.

Other carriers

The other carriers do not operate disability equipment programs of their own, however, some of them are required to meet obligations under the *DDA* in relation to the equipment and services that they offer. In order to comply with the DDA some carriers are required to:

- provide disability telecommunications equipment, (this may be done through wholesale arrangements with Telstra or by other means); and
- provide documentation (such as bills, information material or equipment instruction manuals) in accessible formats (such as large print, Braille, audio, etc).

In addition, while the other carriers have not submitted disability action plans to HREOC, many of them are signatories to codes that are developed by the Australian Communications Industry Forum (ACIF), which is the communications industry's self-regulatory body. In 2001, ACIF published a number of guidelines in relation to access to telecommunications for people with disabilities. These guidelines have subsequently been applied in the development of its codes. As regards the provision of disability telecommunications equipment, relevant ACIF codes include:

- Code C521:2004 — Consumer Information on Prices, Terms and Conditions; and
- Code C625:2005 — Information on Accessibility Features for Telephone Equipment.

One of the carriers that does not operate its own DEP has publicly stated that it feels that disability equipment programs are too difficult to manage, monitor and maintain for small and medium providers, because there are not enough customers to justify the cost of a large-scale disability equipment program. There are also carriers that offer a STS, but are not obliged to offer non-standard equipment to their customers because they do not normally offer or provide a standard handset with the STS.

2.7 Independent Living Centres

In addition to the regulatory, self-regulatory and legislated arrangements that are in place to ensure that consumers with disabilities have reasonable access to the STS on an equitable basis, there is another significant initiative that is relevant to this review. The Independent Living Centres receive Home and Community Care funding from the Australian Government Department of Health and Ageing, and additional funding from the health or human services departments of individual states and territories.

Independent Living Centres (ILCs) are information resource centres, located in every state and in the ACT. Each centre displays, and provides trial access to, a comprehensive range of products and equipment to assist people with disabilities to perform daily living activities independently. The ILCs also work closely with Telstra with regards to telecommunications disability equipment, and several ILCs have at least one of each of Telstra's more popular DEP products for customers to 'try before they buy'.

Each centre has a localised products and equipment database to complement the display. The occupational therapists providing telephone consultations use the database to provide information that is relevant to the individual caller's needs. This database is directly searchable via the Internet. ILCs do not sell equipment — they display the equipment, and provide assistance in selecting a suitable product.[32] Customers can then apply for the product through their carrier, or if it is not available through the current equipment arrangements, purchase it separately.

2.8 Findings summary

- The *DDA*, the *TCPSS Act*, the *Telecommunications Act 1997*, and the *Telecommunications (Equipment for the Disabled) Regulations 1998* ensure reasonable access to the STS on an equitable basis for consumers with a disability. However, in spite of the existence of the *DDA*, and the USO, it was only after the Scott case led to a HREOC inquiry that arrangements were made to provide teletypewriters at the same price as standard handsets. This suggests that in the absence of legislation, carriers would have been unlikely to offer more expensive, non-standard equipment to consumers with disabilities on the same basis and for the same price as standard equipment.

[32] Independent Living Centres Australia Inc 2006, *About Us*, http://www.ilcaustralia.org/aboutus.asp, accessed on 19 May 2006.

- Disability equipment initiatives, products and services that involve non-standard products are difficult to justify commercially, because the market is small, and the products and services may not be profitable.
- Taken together, Australian legislation relating to the provision of telecommunications equipment to consumers with disabilities provides a sound framework for ensuring reasonable access to the STS on an equitable basis, although it is limited to the STS.
- Carriers undertake appropriate consultation with people with disabilities — either through consultative forums of their own, or through ACIF — in order to improve equipment, services and consumer awareness.
- The *Telecommunications (Equipment for the Disabled) Regulations 1998* provide guidance on the nature of the equipment that carriers need to provide to people with a disability but leave the carriers with some discretion as to exactly what is provided.
- In addition to the legislative and regulatory measures, ACIF has developed a set of guidelines on Access to Telecommunications for People with Disabilities. These guidelines are reflected in ACIF's codes of practice, such as the code that establishes the minimum set of standards that service providers are to meet when providing information to consumers about prices, terms and conditions of the products on offer.

Chapter 3

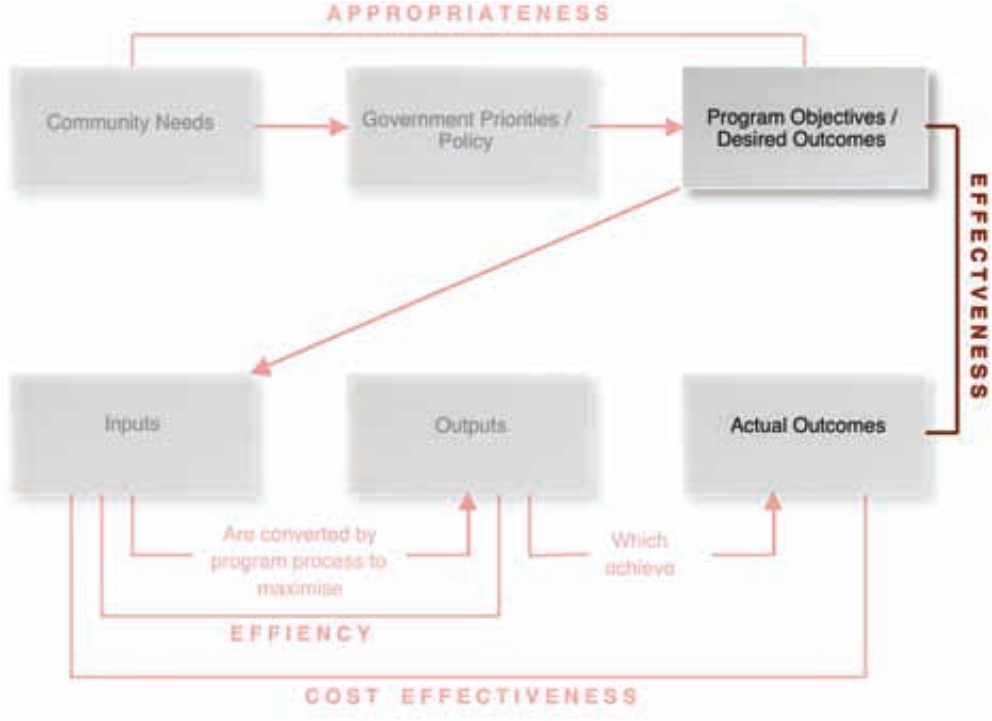
Effectiveness of the current arrangements

This chapter partly addresses term of reference a (i). It examines the effectiveness of the current arrangements in meeting the requirements and needs of consumers with a disability.

The effectiveness of a program is assessed according to how closely the program's actual outcomes match the program's objectives, or desired outcomes (see Figure 3.1). The legislated objective of the USO is to provide all Australians with reasonable access to a STS and payphones on an equitable basis. As discussed in Chapter 2, consumers with disabilities who are unable to use a standard rental handset may be eligible to hire telecommunications disability equipment on the same basis as a standard handset. As required by the *DDA*, where carriers offer a standard handset with the STS, the telecommunications disability equipment must also be offered to eligible consumers for the same fee.

Figure 3.1

PROGRAM EVALUATION — EFFECTIVENESS



Consumers with disabilities have a number of needs and requirements with respect to telecommunications equipment that differentiate them from other consumers (see Box 3.1). The equipment that is currently available meets the specifications of the *Telecommunications (Equipment for the Disabled) Regulations 1998*, as shown earlier in Box 2.5. However, the fact that different types of equipment are available does not by itself mean that the current equipment arrangements are effective in ensuring that customers with disabilities have reasonable access to the STS.

Box 3.1

REQUIREMENTS AND NEEDS OF CONSUMERS WITH DISABILITIES

People with vision impairment (including blindness) may experience difficulties with:

- seeing the numbers or function labels on the keypad;
- being able to get to a ringing phone in time to answer it;
- holding the handset, reading Braille and entering numbers at the same time;
- installing equipment unassisted;
- using equipment — such as phones, computers or interfaces — that has a 'soft keypad'[33] or keys that are not well defined or separated.

People with hearing impairment (including people who are Deaf) may experience difficulties with:

- hearing spoken conversation;
- conversing vocally; or
- communicating in a language other than Auslan.

People with speech impairment (including mutism) may experience difficulties with conversing vocally over the phone.

People with a mobility or dexterity impairment may experience difficulties with:

- installing equipment unassisted;
- being able to get to a ringing phone in time to answer it; or
- using equipment — such as phones, computers or interfaces — that has a 'soft keypad' or keys that are not well defined or separated.

People with an intellectual disability may experience difficulties with:

- installing equipment unassisted; or
- using a handset with a lot of keys or functions.

The effectiveness of the current equipment arrangements depends on a range of factors, including:

- the extent to which the eligibility criteria under the current equipment arrangements are appropriate to the needs of consumers with disabilities; and
- the availability of equipment that matches the needs of consumers with disabilities.

[33] A 'soft keypad' is when the keys appear on a screen that responds to touch.

Another major consideration is the extent to which people are aware of the equipment that is available, and of whether or not they know that they are eligible to obtain equipment from their carrier at the same rate as for a standard handset. While this is relevant in relation to the effectiveness of the current arrangements, consumer awareness is discussed in greater detail in Chapter 5, and in particular, section 5.1.

3.1 The current equipment arrangements

For the period 2004-05, ACMA received information from six carriers in relation to their supply of the STS.[34] Telstra, AAPT and Primus reported receiving 10 587 requests for new disability equipment between them, of which they were able to meet 10 562, or 99 per cent of the requests that they received.[35] This suggests that as a whole, carriers are able to effectively supply telecommunications disability equipment under the current arrangements to consumers that request it.

Optus did not report the number of disability equipment requests that they received or fulfilled, as they no longer track applications for disability equipment separately to applications for standard equipment.[36] This is because upgrades to the standard equipment (discussed further below) have resulted in it becoming accessible to some consumers with disabilities. It is likely that requests for telecommunications disability equipment from Optus have declined as a result of the upgrades to the standard equipment.

Telstra, Primus and AAPT reported that the number of requests for disability equipment had declined in 2004-05 compared to 2003-04. These carriers attribute the decline in the number of applications to the upgraded features of the new standard rental handsets issued by Telstra and Optus. The main benefit of the new standard handsets is that they incorporate an accessible volume control. This has reduced demand for disability equipment since volume control phones were the most frequently requested items under Telstra and Optus' DEPs (see Figure 3.2),[37] and are reported by AAPT to remain one of the most requested pieces of equipment.[38]

The introduction of universal design features — features that are considered to be widely usable by people with different sorts of needs — in standard equipment is a positive initiative, and is highly likely to reduce future demand for telecommunications disability equipment provided via a separate program. This is further supported by the fact that in 2003-04, Telstra, AAPT and Primus reported a total of 16 002 requests for new disability telecommunications equipment — compared to 10 587 in 2004-05. However, there is a limit to the extent to which the functionality of a product can be enhanced (as discussed further in Chapter 9).

[34] Australian Communications Media Authority 2005, *Telecommunications Performance Report 2004-05*, Melbourne, pp. 58.

[35] Australian Communications Media Authority 2005, op. cit. pp. 54-5.

[36] Australian Communications Media Authority 2005, op. cit. p. 55.

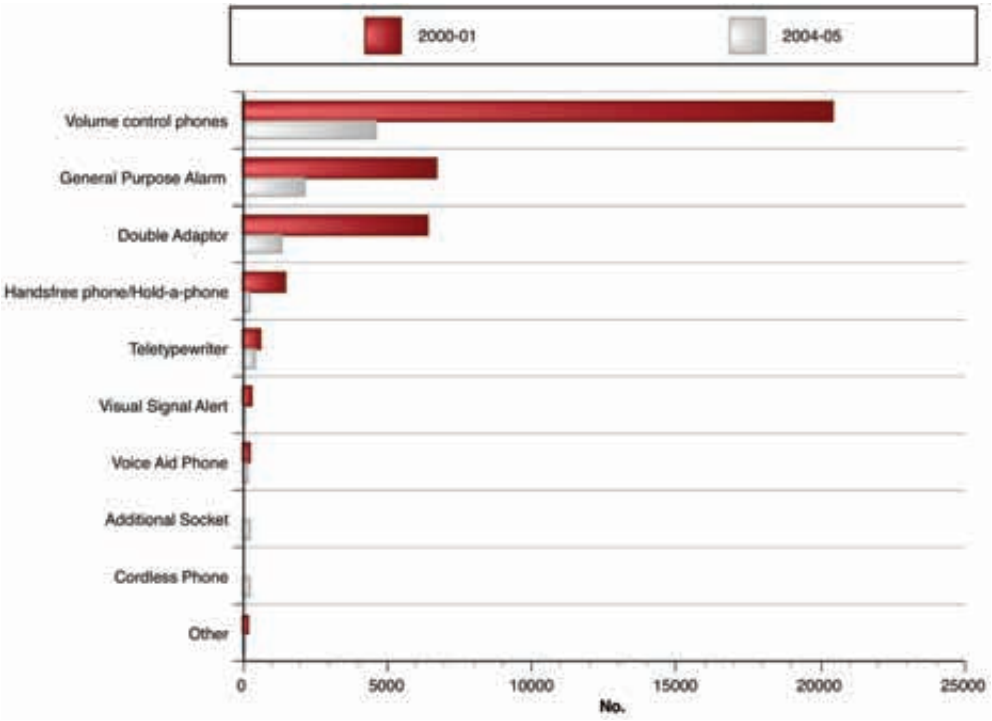
[37] Australian Communications Authority 2004, *Telecommunications Performance Report 2003-04*, Melbourne, p. 162.

[38] Australian Communications Media Authority 2005, op. cit. p. 55.

In 2003-04, Telstra and APPT were able to supply all of the requests that they received. Optus received 2206 requests for equipment and met 90 per cent of these, while Primus fulfilled around half of its requests.[39] When combined, these four carriers met over 98 per cent of the customer requests that they received for disability equipment.

Figure 3.2

DETAILS OF DISABILITY EQUIPMENT SUPPLIED BY TELSTRA, 2000-01 AND 2004-05



Source: Information provided by Telstra

3.2 Effectiveness of the current arrangements in relation to the STS

In the cases in which equipment requests went unfulfilled, the carriers provided a number of reasons as to why this was the case, including:

- appropriate equipment not being available;
- forms not being returned by the customer;
- customer already had the equipment;
- customer decided to purchase their own equipment;
- customer not eligible or with another service provider;
- customer changed their mind; and
- incorrect information supplied by the customer.

[39] Australian Communications Authority 2004, op. cit. p. 162.

These explanations for why equipment requests went unmet are indicative rather than exhaustive. As a result, it is not possible to draw conclusions as to how often a request was unmet because, for example, the appropriate equipment was not in stock as opposed to how many times a request went unmet because a customer supplied the incorrect information. Nevertheless, the explanations provided here show that the instances in which an equipment request was unmet could be due to a lack of appropriate equipment, a lack of consumer awareness about the current arrangements, or a communication failure between the carrier and the consumer.

While carriers as a whole were able to meet upwards of 98 per cent of the requests that they received, the performance of individual carriers varied from as little as 50 per cent to as much as 100 per cent, suggesting that the issues stated above are of more relevance to some carriers than others. Clearly, the current regulatory and legislative arrangements are not by themselves fully effective in providing all customers with disabilities with access to the STS, because there are implementation issues at the individual carrier level.

Eligibility criteria

As shown above, in some of the cases where a request for equipment goes unmet, the reason given is that the person who requests it is not eligible for the equipment, or is with another service provider. Consultations with carriers, disability stakeholders and equipment providers revealed that there are a number of factors to consider in this regard. From the perspective of most carriers, the equipment is provided in order to address the needs of the consumer that requests it. In order to do so effectively, carriers require information about the ways in which the standard equipment is unsuitable for that customer. Currently, the application form for disability equipment requests requires applicants to provide this information using their own words — for example, 'I have difficulty holding the phone/I cannot hear on the telephone/I cannot get to the phone in time to answer it' — and have it supported by an appropriately qualified professional.

The information that people provide with regards to why they are unable to use a standard handset varies considerably, depending on the individual who fills out the form, their knowledge of what is available, and their interpretation of their needs and entitlements. Responses range from statements of what equipment someone would like, to describing their particular disability, to describing their actual needs. One stakeholder suggested that having a 'tick a box' approach to gathering this information would be superior to asking people to describe their needs in their own words, because this would prevent people from being judged as ineligible for the equipment on the basis of providing the incorrect information. It is uncertain how much more useful this would be, given that the carriers consulted during this review indicated that they followed up the requests they received by contacting the customer, and discussing their needs in order to establish what would best suit their needs.

Several consumer representatives argue that the opposite is true, and that the carriers provide equipment to people with a particular disability, rather than people with a particular need. The example that was given was that people who are blind or severely vision impaired have trouble getting to the phone in time to answer it, but are told that they are not eligible for a cordless phone because they are not mobility impaired. Another example was of a person with a hearing impairment who called her carrier to enquire about applying for a TTY for herself, and was told that she would be ineligible because she was clearly able to use the phone to contact the call centre.

There is some confusion among non-Telstra customers with respect to whom they should apply for disability equipment. A recent study by Women With Disabilities Australia (WWDA) revealed that some consumers were unsure whether they should approach Telstra or their own carrier in the first instance. The study reports that this confusion was exacerbated by the following, when these consumers attempted to make enquires:

- Telstra staff did not always inform these customers that they should ask their current carrier about accessing telecommunications disability equipment through the wholesale arrangement; and
- the staff of those carriers that have wholesale arrangements to access Telstra's DEP either did not always volunteer or were not always able to provide this information to the people making enquiries.[40]

The WWDA investigation also reported that people who applied for disability telecommunications equipment had to be persistent, not be put off if they were initially informed that no equipment or assistance was available, and know their rights under the *DDA*. Consumers who have had this experience may either conclude that they are not eligible for equipment and choose not to apply through their carrier's equipment arrangements, or that they may fill out an application and send it to the wrong carrier.

As claimed in ACIF's Code on 'Customer Information on Prices, Terms and Conditions', 'industry compliance with the Code will:

- better inform consumers about the industry and the products on offer;
- improve the fairness and accuracy of information provided;
- allow consumers to make informed purchasing decisions; and
- enhance customer confidence in the industry.

In spite of consumers directly contacting their carriers and requesting information about disability equipment arrangements, it appears that the information is not always volunteered or provided. This observation from the WWDA study is also supported by experiences shared by focus group participants (discussed further in Chapter 5). The carriers in the WWDA study's examples are not currently signatories to this ACIF Code. As more than one carrier was involved, these examples demonstrate that the current legislative, regulatory and self-regulatory arrangements are not effectively addressing the information needs of consumers with disabilities.

[40] Women With Disabilities Australia 2004, *Consumer Issues in Telecommunications*, Rosny Park (Tas).

Availability of equipment

Access to the STS at home

The current arrangements provide for consumers with a disability to receive one piece of non-standard equipment for the same rental rate as a standard handset. At least one carrier, at its own discretion, provides more than one piece of equipment to some customers — people who are severely mobility and dexterity impaired can hire a large button phone as well as a cordless large button phone at the same rate as a single, standard handset. In most cases, however, customers are limited to a single piece of equipment, and must therefore be matched with the sort of equipment that best meets their needs.

The range of equipment that is defined in the *Telecommunications (Equipment for the Disabled) Regulations 1998* is fairly broad, and covers off a number of products that address a particular need. The equipment that is offered by carriers, either as part of their DEPs or through other arrangements, reflects the regulatory requirements. The sort of equipment that is offered is generally able to provide effective access to the STS for most consumers with disabilities, however, it is not always effective in meeting the needs of someone with a disability. In many cases, this is due to the availability of equipment solutions that can be offered to people who are unable to use standard equipment.

One example of a product that effectively provides access to the STS, but fails to effectively meet the needs of someone with a disability is the TTY. Communication by TTY is very slow. Partly, this is because people cannot converse simultaneously or interrupt one another — a TTY user has to wait until the message is fully received and read before keying in a response. A 2005 discussion paper circulated by the Australian Association of the Deaf (AAD) estimated that the maximum speed that a TTY can handle is only 67 words per minute, whereas people speak an estimated 240 to 300 words a minute, and a deaf person can sign an estimated 120 to 180 words a minute.[41]

Importantly, the limitation on the speed of a TTY conversation is not linked to a user's typing speed, but is due to technical limits: a TTY can only send or receive a maximum of 50 bits per second. AAD notes that TTYs are 'very rarely used for business calls because many people in businesses are always busy and do not have much time or patience to take a NRS call'.[42] A service provider that relied heavily on its call centre to process its sales supported this observation, noting that:

> National Relay Service calls are a pain. They take too long…An average call length here is about twenty seconds. An average call through the NRS might last five minutes. If you consider that the cost of a 20-second call is a bit over a dollar to process, you can see that too much reliance on the NRS would be a problem for us.[43]

The majority of calls placed through the NRS involve at least one of the participants using a TTY, or a modem that is restricted to mimic the speed of a TTY.

[41] Australian Association of the Deaf 2005, *What is deaf equivalent to Voice Telephony?* Sydney, pp. 6-7.

[42] Ibid. p. 7.

[43] Eureka Strategic Research 2005, *Teletypewriter (TTY) use in Australia*, Canberra, p. 118.

Consumer representative stakeholders felt that consumers who were blind would benefit from having a headset to plug into their phones. While people who are blind are able to use a standard handset, the headset is necessary for functions such as telephone banking or other transactions conducted over the telephone. This is because someone who is blind needs to keep one hand on the keypad in order to key in the necessary information, while using the other hand to read the Braille that provides the information (for example, biller codes, consumer reference numbers, etc) that needs to be keyed in. While the specific product referred to in this example is not offered under the current arrangements, a number of products that *are* offered under the current arrangements provide a similar function (for example, phones with speaker or handsfree capability). Whether or not someone who is blind is able to receive this sort of equipment under the DEAs is related to eligibility, rather than availability considerations.

These examples demonstrate that it is possible for the current arrangements to provide someone with access to the STS, while at the same time failing to effectively meet that person's requirements and needs. By the same token, it is important to note, however, that non-standard equipment cannot be expected to entirely compensate for a user's disability, and that the purpose of the equipment is to provide the user with reasonable access to the STS on an equitable basis.

Access to the STS away from home

As discussed above, consumers with disabilities are generally restricted to hiring one piece of non-standard equipment through the current equipment arrangements. Consumer representative stakeholders noted that this limited the ability of some people to access the STS when away from home. As discussed above, carriers reported that the volume control phone was one of the most frequently requested pieces of equipment by consumers, however, telephones in hospitals, hotels, and so on did not always incorporate a volume control. The same point was made about TTYs — the current equipment arrangements only provide for a consumer to hire a single TTY at the discounted rate, and there is no scope for using the TTYs currently on offer in a portable manner. People who are severely hearing or speech impaired or deaf are therefore reliant on payphones with TTY functionality to access the STS when they are away from home. Information about where payphones with TTY functionality are located is provided on the Telstra website.

The USO provides for away-from-home access to the STS by obliging Telstra, as the USP, to provide Australians with reasonable access to payphones on an equitable basis. In order for someone with a hearing or speech impairment to use the payphone, some of these payphones are enhanced with TTY functionality. In other cases, in order to facilitate access for people who are wheelchair bound, the positioning of the payphone is lowered. Between 2000-01 and 2004-05, the total number of payphone services in operation has fallen from around 77 000[44] to 61 735.[45]

[44] Australian Communications Authority 2004, *op. cit.* p. 154.

[45] Australian Communications and Media Authority 2005, op. cit. p. 5.

Anecdotally, this has been linked to the rapid take-up of mobile services over the same period (increasing from 11.1 million mobile phones in 2000-01 to 18.4 million in 2004-05)[46], the subsequent decrease in the number of calls made using a payphone (from 277 million calls in 2001-02[47] to 226 million calls in 2004-05)[48], and the therefore declining profitability associated with maintaining payphones.

Some stakeholders argue that for people with disabilities, the direction of causality goes the other way, saying that people with disabilities have become more reliant on mobile phones because of the reduced numbers of payphones, and that fewer calls are made on payphones *because* the number of payphone services is declining. However, this argument can be said to apply to *all* payphone users and not just those with a disability. It should also be noted that while overall payphone services have declined, the number of TTY enhanced payphones has increased from 88 in 1998-99[49] to more than 230 at present,[50] improving away from home access to the STS for people who are hearing impaired or deaf.

3.3 Findings summary

- In 2004-05, three carriers (Telstra, AAPT and Primus) met nearly all the requests they received for equipment. The number of unmet requests was attributed to lack of equipment availability issues, lack of consumer awareness, and lack of proper communication between the carrier and the customer. This demonstrates that the current arrangements, by themselves, are not fully effective in providing all consumers with disabilities with access to the STS.
- In the majority of cases, equipment is provided, and facilitates access to the STS for someone with a disability but this does not mean that the needs and requirements of these consumers are being met fully and effectively. However, non-standard equipment will not always have the same functionality as standard equipment, and the aim of the current arrangements is to provide consumers with reasonable access to the STS on an equitable basis.
- In recent years there has been a significant decline in the number of requests for telecommunications disability equipment. This has been attributed to the introduction of upgraded standard handsets by Telstra and Optus that include an accessible, volume control. To some extent, demand for non-standard equipment can be addressed by improving the functionality and accessibility of standard equipment.

46 Australian Communications and Media Authority 2005, *i*p. 1.

47 Australian Communications Authority 2004, op. cit. p. 154.

48 Australian Communications and Media Authority 2005, op. cit. p. 1.

49 Australian Communications Authority 2004, op. cit. p. 155.

50 Telstra 2006, *Telstra Disability Services: TTY Payphones*, http://www.telstra.com.au/disability/ttypayphones/index.htm, accessed on 21 June 2006.

Chapter 4

Arrangements in other countries

This chapter addresses term of reference a(ii). It examines the international arrangements for the provision of telecommunications equipment to consumers with a disability and compares these with the arrangements in place in Australia

Many of the countries that are comparable with Australia, in terms of economic and technological development, make specific arrangements for people with disabilities to access telecommunications services. The telecommunication needs of consumers with disabilities can be addressed through the subsidised provision of non-standard equipment (such as TTYs), non-subsidised standard equipment that meets specific needs (such as web cameras), and through the provision of associated services (such as video relay). Some of the countries discussed in this section focus on service delivery or ensuring the availability of standard equipment (such as sophisticated mobile phones, broadband or web cameras). Equipment and services are subsidised in some countries but not in others — arrangements vary widely.

Most countries have something equivalent to Australia's Universal Service Obligation. However, in a number of cases, these USOs do not require (or are currently interpreted as not requiring) the provision of subsidised equipment for people with disabilities. Where a USO (or equivalent arrangement) is of relevance to the provision of subsidised equipment to users with disabilities, details are discussed below. [51]

It is useful to examine the approaches used overseas to identify alternative approaches to service provision, and the lessons that these different approaches can provide for Australia. This is an area of public policy where approaches in some countries are currently evolving. Two of the countries discussed below are currently reviewing their arrangements.

Most of the information in this chapter is based on desk-research. In addition, a questionnaire was sent out to 13 stakeholders in 8 countries. Table 4.1 outlines the organisations involved in the consultation process and those organisations that responded. Other sources of information were also used.

Information about the equipment arrangements in other countries is somewhat limited and, in some cases, lacking in detail. In part, this is because the telecommunication needs of consumers with disabilities are addressed in other ways, but also because some countries do not have a coherent equipment initiative at the national level. Nevertheless, there is adequate information to suggest that there are a few countries where the equipment arrangements are broadly similar to that in Australia, and many where the equipment arrangements appear to be considerably less than in Australia. The sections below provide an overview of the key features of current arrangements to provide people with disabilities with access to telecommunications services in:

[51] For a more detailed analysis of USOs see the *Review of the operation of universal service obligation and customer service guarantee*, Department of Communications, Information Technology and the Arts, 2004.

- The United States of America;
- Canada;
- New Zealand;
- Norway; and
- selected countries in the European Union (the United Kingdom, Denmark and Sweden).

Table 4.1

INTERNATIONAL STAKEHODLERS APPROACHED

Organisation	Country	Response to Survey
Nordic Forum for Telecommunications and Disability	Denmark	
National Post and Telecom Agency	Sweden	✓
Omnitor Sweden	Sweden	✓
European Commission — Forum for Telecommunications and Disability — 2 participants	European Union	
COST 219TER — European Commission action project on telecommunications and disability	European Union	
Office of Communications	United Kingdom	✓
Department of the Secretary General	Norway	
Federal Communications Commission	United States	✓
American Association of People with a Disability	United States	
Canadian Radio Television and Telecommunications Commission	Canada	
Office of Disability Issues	New Zealand	
Disabled Peoples Association	New Zealand	✓

Source: ACG

4.1 The United States of America

In the United States, the responsibility for regulation of telecommunication services for people with a disability lies with State Governments. However the *Americans with Disabilities Act* (ADA) *1990* and the *Telecommunications Act* 1996 apply nationally. The Federal Communications Commission (FCC) provides national guidance on telecommunications issues for people with a disability.[52]

In the United States in 2000, there were estimated to be 33.2 million people with a disability, representing 18.6 per cent of the US population. Of this group, 9.3 million people had a sensory disability, including visual or hearing impairments. A number of these people benefit from enhanced telecommunications services.[53]

[52] National Council on Disability 2005, *Access to Information Technology by People with Disabilities: Illustrations of Implementation from the United States*, Washington D.C, p. 2.

[53] J. Waldrop, S. Stern 2003, *Disability Status: 2000 — Census 2000 Brief*, US Census Bureau, US Department of Commerce, Washington D.C., p. 1.

Each State and telecommunications service provider is required to ensure accessibility to all users through:

- a text relay service;
- equipment that is TTY compatible;
- equipment that is operable by those people with low vision and limited hearing, but are not clinically deaf or blind; and
- bills, manuals and other written and verbal communication in alternate formats, including Braille and large print.[54]

Text and Internet relay services operate in the United States through a shared state and federal funding mechanism paid by levies on subscribers and telecommunications service providers. The FCC also compensates relay operators to provide a video relay service at no charge to people with a hearing impairment. In 2006, more than six providers across the United States also provide a video relay service.[55]

With the exceptions of Alabama, Delaware, the District of Columbia, New York, and Ohio,[56] most of the states in the USA offer an equipment distribution program for consumers with disabilities. In some states, services for people with a disability are provided beyond those required under the two Acts. The State of California is particularly advanced in the number of initiatives it has mandated, as well as the sorts of services it provides.

Telecommunications equipment — of a range that is slightly larger than the products offered through Australia's DEAs — are hired to consumers with disabilities at no charge to the consumer. Products that are either available or being considered in California, which have not reached Australia but may be of interest include the CapTel, and a telephone that can be used by someone with a cognitive disability.

The CapTel, or captioned telephone, provides:

> word-for-word captions of everything said by the other party in a telephone conversation. At the same time, the voice can be heard via an amplified handset. Users with intelligible speech who are deaf or hard of hearing speak directly to the other party. Conversations flow at a near-normal pace.[57]

The CapTel has not as yet been added to California's equipment list, as its usage is currently under trial.

The second item meets the needs of someone with a cognitive impairment through a combination of a more sophisticated telephone handset, and a number of assistive services, including:

- memory dialing;

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54 Federal Register 1998, *Telecommunications Act Accessibility Guidelines*, Washington D.C.

55 Federal Communication Commission 2006, *Homepage*, http://www.fcc.gov/cgb/consumerfacts/videorelay.htm, accessed May 2006.

56 TEDPA 2006, *State Programs*, http://www.tedpa.org/home.php?PageID=2&Page=State_Programs, accessed on 11 August 2006.

57 California Telephone Access Program 2006, CTAP Services and Equipment, http://www.ddtp.org/CTAP/services_and_equipment/, accessed on 11 August 2006.

- speed dialing;
- speakerphone with visual display of numbers dialled; and
- three-way calling which allows a familiar third party to assist with phone communication.[58]

California's equipment distribution program, and all of the associated outreach activities, are delivered through the California Public Utilities Commission, rather than through a carrier or an equipment manufacturer/importer.

For example, in California, telecommunications services for people with a disability are provided through the Deaf and Disabled Telecommunications Program (DDTP). California's relay service and a telephone access program are funded through a surcharge of 0.05 per cent on long-distance calls for all general telecommunications users across the State.[59] In addition to the relay service, the DDTP provides the following services:

- a video relay service at no additional charge through three service providers — MCI, Nordia and Sprint Telecommunications;
- a Spanish relay service, similar to a text relay service, but for those people with a disability and Spanish as their first language; and
- a speech-to-speech relay service available to all people with a disability, particularly those with a speech impediment at no additional charge.[60]

The video relay service is offered through web cameras and through video phones, both of which require a broadband connection. Currently, the service is offered primarily for video relay users to call out, and it is optional for the relay service providers to offer standard telephone users the option of making a video call through the relay service to a video relay user.

4.2 Canada

There are approximately 3.6 million people in Canada living with a disability, representing 12 per cent of the Canadian population.[61] The Canadian Radio-Television and Telecommunications Commission (CRTC) regulates Canadian telecommunications including services for people with a disability. Currently, there is a requirement to provide a text relay service for Canadians with a hearing impairment. There are approximately 230 000 deaf people living in Canada.[62] Bell Canada provides the text relay service — local calls are provided free of charge and clients using a TTY receive a 50 per cent discount on long distance telephone calls.[63]

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58 California Telephone Access Program 2006, CTAP Services and Equipment, http://www.ddtp.org/CTAP/services_and_equipment/, accessed on 11 August 2006.

59 Deaf and Disabled Telecommunications Program 2002, *Annual Report 2002-2003*, p. 4.

60 University of California, *Homepage*, http:// cns-cs.berkeley.edu/special-needs/trs.html, accessed March 2006.

61 Government of Canada 2004, *Advancing the Inclusion of Persons with Disabilities 2004*, Ottawa, p. 8.

62 Canada Association of the Deaf, *Homepage*, http://www.cad.ca/index2.php?lid=e&cid=12&pid=19, accessed March 2006.

63 Bell Relay Service, *Le service relais Bell*, http://www.aosf.on.ca/anglais/service_relais_bell.html#types, accessed May 2006.

A review of Canada's telecommunications policies was commissioned by the Minister of Industry in 2005, with a final report released in March 2006. The review found that little had been done to improve access to telecommunications for people with a disability, apart from the text relay service. The review recommended enhancing the social wellbeing of Canadians and the inclusiveness of Canadian society by:

- facilitating access to telecommunications by persons with disabilities;
- maintaining public safety and security;
- contributing to the protection of personal privacy; and
- limiting public nuisance through telecommunications.[64]

Most of the larger carriers in Canada do not provide detailed information about 'special needs' equipment on-line. However, from the information that they do provide, it is evident that there are no special rental arrangements, and that in most Provinces customers must purchase the equipment (for which they may be able to claim a tax deduction). Most of the carriers provide a phone number that a 'special needs' consumer can call, in order to select the product that will best meet their needs, but there is little information available on-line.[65]

As regards to the range of equipment, customers can purchase TTYs — including TTYs that are compact, portable and that can be used with mobile phones — visual alerts, cordless phones and volume control phones. Some equipment retailers offer a discount for customers who have a medical certificate.

At the time of the preparation of this report, Canada had no national equivalent to Australia's DEAs. In 2002, the Canadian Association of the Deaf issued a position paper in relation to access to telecommunications, particularly the TTY:

> Another concern is the lack of a uniform distribution process for TTYs. Each province seems to have its own rules for providing, loaning, or selling TTYs, its own pricing policy, and its own preferred distribution methods (social services ministry, phone company, service agency, independent dealers, etc.) The Canadian Association of the Deaf maintains that since the telecommunications system is a public service, the telephone companies should take the responsibility for distributing and maintaining high-quality TTYs, while allowing independent retail competition. Every deaf person who requires a TTY to access the telephone system should be provided with one on the same terms as regular telephones are provided to hearing persons.[66]

64 Telecommunications Policy Review Panel 2006, *Telecommunications Policy Review: Final Report*, chapter 2, Ottawa.

65 Acuity Research Group 2005, Telephone terminals and accessibility with special reference to visual disabilities, http://www.telecomreview.ca/epic/Internet/intprp-gecrt.nsf/vwapj/Chris%20_Marie_Stark-Appendix_B.doc/$FILE/Chris%20_Marie_Stark-Appendix_B.doc, accessed on 20 June 2006.

66 Canadian Association of the Deaf 2002, *Access to the telephone system and the Internet*, http://www.cad.ca/index.php?lid=e&cid=12&pid=21, accessed on 20 June 2006.

To date, this view of the Canadian Association of the Deaf has not been addressed by the federal Canadian Government. However, there have been discussions on the matter between federal and provincial authorities. More recently, the Canadian Association of the Deaf submitted a number of suggestions in relation to the disposition of funds in deferral accounts for Canadian carriers. One of suggestions was that the funds could be used for 'providing teletypewriters (TTYs) for deaf users at no charge'.[67]

The Province of Ontario is more advanced in addressing the telecommunications needs of consumers with disabilities. Deaf, hearing and speech-impaired residents of Ontario are eligible to receive assistance from a provincial program. Consumers purchase their equipment from a registered vendor, who bills the provincial government for 75 per cent of the value of the equipment or C$400 (approximately AUD$488) — whichever is lower. Ontario also provides assistance for consumers who want to replace equipment that they have had for five years or longer.[68]

4.3 New Zealand

In New Zealand, the regulation of telecommunications services for people with a disability is the joint responsibility of the Minister for Communications and the Minister for Disability Issues. With respect to universal service, Telecom, one of New Zealand's carriers, has a contractual arrangement with the Crown that enables the New Zealand Government to meet its social objectives in telecommunications. The 'Kiwi Share' was established when Telecom was privatised in 1990.

The 1990 Kiwi Share required Telecom to:

- maintain a local free calling option for ordinary residential telephone service;
- charge no more than the standard residential rental for ordinary residential telephone service; and
- continue to make ordinary residential telephone service as widely available as at 1 November 1989.

The Kiwi Share has since been updated, and from 2001 onward, the Kiwi Share:

- clarifies that free local calls include standard calls to the Internet and fax calls;
- brings basic Internet access to virtually all New Zealanders by upgrading Telecom's network to provide 9.6kbps data capability to 99 per cent and 14.4 kbps to 95 per cent of existing lines over the next two years (Telecom to bear the capital cost of this upgrade) while maintaining existing kbps data capability if higher than 9.6kbps or 14.4 kbps;
- extends network coverage obligation to current levels; and

[67] Canadian Radio-Television and Telecommunications Commission 2006, *Telecom Decision CRTC 2006-9: Disposition of funds in the deferral accounts*, http://www.crtc.gc.ca/archive/ENG/Decisions/2006/dt2006-9.htm, accessed on 20 June 2006.

[68] Ministry of Health and Long-Term Care 2006, *ADP: Teletypewriters for the Deaf and Speech Impaired*, http://www.health.gov.on.ca/english/public/pub/adp/tty.html, accessed on 20 June 2006.

- requires Telecom to meet detailed service quality measures and report to the Crown and the Telecommunications Commissioner. The service quality measures include Telecom's performance, including 111 performance and dial tone availability.[69]

In 2001, there were approximately 750 000 people with a disability living in New Zealand, representing 22 per cent of total population.[70] Until recently, special provision of telecommunications services for people with a disability was minimal. In November 2004, a text relay service was introduced in response to a review of telecommunications services commissioned by the Ministry of Economic Development. The Ministry engaged Sprint to implement the text relay service.[71]

The precise number of people who require text relay services in New Zealand is not known. However, a report by Fitzgerald and Associates on the viability and costs of providing a relay service and alternative technologies estimated the number to be between 14 000 to 70 000 individuals. [72] The Ministry of Health has estimated the number of individuals requiring a text relay service in New Zealand at 7000.[73]

In order to access the text relay service, customers can rent a subsidised textphone from the government. Customers are eligible if they:

- are deaf, hearing-impaired, deaf-blind, or speech-impaired;
- have a speech impairment or other communication impairment; or
- cannot communicate using a standard telephone or amplified telephone headset.[74]

The subsidy is for a single piece of equipment only, and consumers who pass a means test can either rent the item at no charge, or be reimbursed for their charges.[75] The sort of equipment that is available under the arrangement includes:

- visual alerts — both that link directly to the telephone, or that picks up other aural alerts such as the sound of the telephone ringing, a baby crying, the doorbell, and so on;
- visual and vibration alerting receivers, such as a wireless body-worn device, which receives alarm signals…[and]…alerts the user by converting the sound to a vibration and a visual signal;[76]
- TTYs that are similar to those available in Australia, such as the Miniprin™, the Superprint™, the Uniphone™, the large visual display that connects with the Superprint™; and

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69 Ministry of Economic Development 2001, *Government announces updated Kiwi Share obligation*, http://www.med.govt.nz/templates/Page____4166.aspx, accessed on 8 September 2006.

70 Ministry of Health 2002, *Living With Disability in New Zealand*, Wellington, p. 6.

71 Ibid., New Zealand Government 2005, p. 2.

72 Human Rights Commission 2002, Report to the Prime Minister on Telecommunications Services for Speech and Hearing Impaired New Zealanders, Wellington, p. 3.

73 New Zealand Government 2005, *Access to Telecommunications for People with a Disability, Cabinet Paper*, Wellington.

74 New Zealand Relay 2006, *NZ Textphone/Equipment Services Program*, http://www.nzrelay.co.nz/equipment.html, accessed on 20 June 2006.

75 Ministry of Economic Development, 2006, *A Guide to Renting a Textphone*, http://www.nzrelay.co.nz/pdfs/NZ_Eligibility_Criteria.pdf, accessed on 20 June 2006.

76 New Zealand Relay 2006, *Textphone equipment*, http://www.nzrelay.co.nz/pdfs/NZRelaytextphonequipment.pdf, accessed on 20 June 2006.

- a mobile TTY — the DSPG Textlink 9100M, a compact TTY that can be connected both to a landline phone as well as to a number of mobile phones.[77]

New Zealand also has Internet Relay, which is also provided by Sprint. Calls made using Internet Relay are charged in the same way as calls made using a textphone — local and national calls are free, while all other calls are charged for. As with textphones, customers must register in order to make a chargeable call (for example, an international call, or a call to a mobile phone). The equipment requirements for making a call using the Internet Relay service are:

- a computer;
- a phone line;
- Internet service; and
- a web-browser.[78]

4.4 The European Union

All European Union (EU) member nations are subject to the Universal Service Obligation (EU-USO),[79] dating back to 1984. Each EU member nation determines their level of compliance and can use the EU-USO as a regulatory tool for telecommunications providers.[80] The EU-USO suggests all telecommunications providers make services available for people with a disability. Most EU countries interpret the EU-USO as requiring the provision of public telephone equipment that is accessible to persons with a disability, but not placing a similar requirement on telephone equipment located in private premises. Compliance with the EU-USO involves the areas specified within, including:

- access to a text relay service and rebate scheme;
- requirements to make public payphones accessible to customers with disabilities;
- directory information free of charge and available through the text relay service;
- telephone bills in Braille and large print formats; and
- priority fault repair.

There are approximately 50 million people with a disability in Europe.[81] Of these people, there are 1 million deaf people and 2 million people with a speech impairment.[82]

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77 New Zealand Relay 2006, *Textphone equipment*, http://www.nzrelay.co.nz/pdfs/NZRelaytextphonequipment.pdf, accessed on 20 June 2006.

78 New Zealand Relay 2006, *New Zealand Internet Relay*, http://www.nzrelay.co.nz/nzir.html, accessed on 20 June 2006.

79 European Union 2002, *Directive 2002/22/EC on universal service and users' rights relating to electronic communications networks and services (Universal Service Directive)*, Brussels.

80 Office of Communications 2005, *Review of the Universal Service Obligation: Main Report*, London, p. 31.

81 European Disability Forum, Homepage, http://www. edf-feph.org/en/welcome.htm, Accessed May 2006.

82 J. Gjoderum 2002, *Text Telephony for deaf, Hearing Impaired, deaf-Bind and Speech Impaired People*, National Forum for Telecommunications and Handicap, Oslo, p. 3.

Access to telecommunications is not consistent across EU member nations. A number of EU member nations provide services that exceed the USO. But there are other countries, Belgium, Finland and Greece, for example that only have regulations for the provision of telecommunications services in general, and no specific regulations for people with a disability.[83]

Listed below are examples where EU member nations comply with the majority of EU-USO requirements, provide services that exceed the EU-USO or provide equipment.

The United Kingdom

In the United Kingdom, the Office of Communication (OfCom) has the responsibility of regulating telecommunications, television, radio and wireless telecommunications services in the UK.[84] In 2004, there were 9 million deaf and hard of hearing people in the UK and 2 million with vision impairment.[85]

The UK complies with all 5 areas of the EU-USO. As part of the EU-USO requirements, OfCom obliges British Telecom (BT) to be responsible for funding a text relay service. Currently, this service is utilised by approximately 30 000 regular users at a cost of around £300-350 (approximately AUD$726-847) per user per year.[86] In 2003-04, BT provided £9.0 million (approximately AUD$21.8 million) in funding of the national text relay service.[87] The text relay service is operated by the Royal National Institute of the Deaf, and text calls can be made using a TTY (called 'textphone' in the UK) or a Nokia 9210.

OfCom undertook a review of UK compliance with the EU-USO in the second half of 2005, but formal recommendations have yet to be published. The review is considering several issues regarding services for customers with disabilities, including:

- the introduction of a video relay service, expected to cost around £750 (approximately AUD$1814) per user per year;
- governance of the text relay service;
- web-based access to the text and video relay services;
- alternative text formats;
- payphone accessibility (currently at least 75 per cent of public telephones in the UK must be accessible to wheelchair users and at least 70 per cent must incorporate additional receiving amplification);[88] and
- acceptable formats for bills and contracts.[89]

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83 S. Beaumont 2004, *Telecommunications — the Range of User Requirements*, for European Disability Forum, Brussels, p. 2.

84 Office of Communications 2005, *A Summary of OfCom's Review of the Universal Service Obligation*, London, p. 4.

85 Adult and Community Learning United Kingdom, *Homepage*, http://www.aclearn.net/display.cfm?page=1112, accessed March 2006.

86 Office of Communications 2005, *Review of the Universal Service Obligation: Annexes*, London, p. 38.

87 Ibid.

88 European Commission Communications Committee 2005, *Questionnaire to the Member States on the Electronic Communication Package*, Annex 2, Brussels.

89 Ibid., pp. 31-37.

Ofcom (and the UK Government) take the view that accessible and affordable terminal equipment for users with a disability falls outside the scope of the USO. The UK Disability Rights Commission disagrees with this view.[90] Ofcom also believes that, while mobile users with a disability would value being able to send an SMS message to contacts who have TTY access but no mobile phone, the demand for such a service in the UK is likely to be small. This is because of high mobile penetration among those with a hearing disability and the growing access to the relay service from mobiles.[91]

BT rents equipment to consumers with a disability. However, rental rate varies with the equipment. For example, the BT TTY is available for hire at a rate of just over £5.00 (AUD$12.10) a month.[92] BT's other disability equipment products are available for sale, although the BT website notes that equipment can also be hired. The monthly contribution or rate that consumers must pay for the equipment varies according to the sophistication of the technology that is used.[93]

While the UK does not currently have a national program equivalent to Australia's equipment arrangements, in some parts of the country the social service departments of the local authorities can arrange for the free or a subsidised loan of equipment. The availability of the equipment depends on the policies of the local authority, as well as its resource constraints, as people with disabilities are not the only consumers eligible for assistance.[94]

Denmark

Responsibility for the provision of telecommunications services for people with a disability in Denmark lies with the Minister for Sciences, Technology and Innovation and the National IT and Telecom Agency. Denmark complies with all 5 areas of the EU-USO and related minimum services. EU-USO obligations have been contracted to Tele Denmark Solutions since 1998 and are contracted until 2007.[95]

In addition to EU-USO obligations, the National IT and Telecom Agency enforce the following service obligations for people with disability:

- ensure access to the public emergency service through the national text relay service;
- require installation of text telephone equipment within 29 working days for 95 per cent of cases; and
- require text telephone faults to be repaired within 96 hours for 95 per cent of cases.[96]

90 Office of Communications, 2005, op cit, page 38.

91 Ibid, page 34.

92 British Telecom 2006, *Textphones for people who are deaf or hearing impaired*, http://www.btplc.com/age_disability/phoneservices/products/home/hbttext.htm, accessed on 20 June 2006.

93 British Telecom, *Homepage*, http://www.btplc.com/age_disability/phoneservices/products/home/sighthome.htm.

94 Royal National Institute of the Deaf 2006, *Social services for deaf and hearing impaired adults*, http://www.rnid.org.uk/information_resources/factsheets/benefits/factsheets_leaflets/?ciid=269261, accessed on 20 June 2006.

95 Nordic Forum for Telecommunication and Handicap 2004, *Regulation and Financing of Telecommunications Services for Disabled Persons in Nordic Countries*, Copenhagen, pp. 4-6.

96 Ibid., p.6.

In May 2005, the Minister for Science, Technology and Innovation allocated DKK5million (approximately AUD$22 million) to support the development of new and existing services or products to improve the accessibility of IT and telecommunication to people with a disability in Denmark as part of the *Disability No Obstacle* action plan. Funding was allocated through a number of small grants and includes the support and development of:

- synthetic speech — IT based spelling and writing assistance, intended as a functional tool for dyslexic children, young people and adults;
- video telephony;
- web accessibility; and
- a development project on eye control for IT software and telecommunications for people with a mobility disability.[97]

Sweden

In Sweden, responsibility for the provision of telecommunications services for people with a disability lies with the Swedish National Post and Telecom Agency (PTS), with procurement used as the facilitator tool, rather than regulation. The Swedish Government complies with at least three of the five areas in the EU-USO, including:

- a text relay service;
- cost free directory enquiries; and
- telephone bills in an appropriate format.[98]

In addition to EU-USO requirements, the PTS, through Omnitor Sweden, provides the following services:

- video telephony accessible over the Internet and a trial of access to video telephony accessible with 3G video mobile phones;
- speech-to-speech relay service — a communication service for persons with impaired speech, which involves an intermediary who follows the conversation and may step in and repeat speech where it may be difficult to understand;
- a refund scheme for disability equipment;
- health care information via text telephones;
- screen readers with voice synthesis and Braille display for computers for people with a visual impairment;
- a text emergency service on all text telephones; and
- information services via a web-based database network, including the 'Fruit Tree' network, which is a discussion group for deaf, deaf blind, visually impaired and other disability groups.[99]

[97] Ibid., p. 8. See also, Homepage, http://www.oio.dk/it_for_alle/investeringspuljen.

[98] National Post and Telecom Service 2006, *Convenient invocation of relay services*, Stockholm, p. 1.

[99] Nordic Forum for Telecommunication and Handicap 2004, op. cit. pp. 14-17. Information also provided though consultation with Omnitor Sweden.

Disability equipment is regulated and provided by social authorities, such as the National Board of Health and Welfare (NBHW). The NBHW provides funding to regional councils for purchasing text telephones for deaf and severely hearing-impaired persons and for their relatives. The local authority provides other necessary equipment, and the regional council is informed subsequently. There is typically no cost to the individual — this program is taxpayer funded.[100]

Although the Swedish Government has legislation to impose obligations on making public telephones accessible to people with a disability, no specific obligations have been imposed thus far and adaptation of public telephones to people with a disability is on a voluntary basis by providers.

On average, the Swedish Government provides funding of approximately SEK150 million (approximately AUD$27 million) for activities in the disabled area (including both telecommunications and postal services).[101]

4.5 Norway

In Norway, the Minister of Transport and Communications is responsible for regulation of telecommunications services. Norway is not a member of the EU, but addresses some EU-USO requirements. Currently, Telnor,[102] which is Norway's largest telecommunications group, provides:

- access to a text telephone service; and
- a discount or refund scheme for blind and visually impaired persons.

The Minister for Transport and Communication has also requested Telnor to:

- undertake research and development projects regarding the need of telecommunications service for people with disabilities 'to match at least today's level'; and
- maintain a catalogue of telecommunications equipment for people with disabilities. This catalogue must be distributed to Norway's centres for disability aids.[103]

4.6 Comparison with Australia

Table 4.2 maps the number of people with a disability and the major components of telecommunications services for people with a disability across Australian and the seven comparable countries. A number of observations can be made on the information available.

- The proportion of people with a disability relative to the total population appears to be higher in Australia than in most of the other countries. In Australia, people with a disability represent 20 per cent of the total population.

[100] Nordic Forum for Telecommunication and Handicap 2004, op. cit. p. 17. Information also provided though consultation with Omnitor Sweden.

[101] Ibid., NFTH 2004, p. 16.

[102] Nordic Forum for Telecommunication and Handicap 2004, op. cit. p. 13.

[103] Nordic Forum for Telecommunication and Handicap 2004, op. cit. p. 13.

- Only New Zealand has a higher representation at 22 per cent. People with a disability are least represented in the European Union (at 11 per cent of the total population) and Canada (at 11 per cent of the total population). These differences may be due to the definitions used, and whether people must identify themselves as being disabled or not.
- All nations discussed in this section, including Australia, provide a text relay service. New Zealand, Sweden and the USA also offer an Internet relay service. Canada and New Zealand have only recently introduced a text relay service, whereas Australia has provided the national relay service to people with a disability since 1995 and is introducing Internet Relay in 2007.
- The United States and Sweden provide a video relay service to people with a disability. The UK and Denmark are in the process of introducing a similar service. Australia, Canada, New Zealand and Norway do not offer video relay services to people with a disability.
- Australia, New Zealand, some of the states of the United States and Sweden provide equipment, whereas Norway provides a rebate scheme for people with a disability. Canada, the UK and Denmark provide neither a subsidised equipment scheme nor a rebate scheme for people with a disability.

Table 4.2

INTERNATIONAL COMPARISON OF TELECOMMUNCATIONS FOR PEOPLE WITH A DISABILITY

Country	No. of People with a Disability	Text Relay Service	Video Relay Service	Equipment or Refund Scheme
Australia	4 million (20% of population)	Yes	No	Yes
United States	33.2 million (18% of population)	Yes	Yes	Yes
Canada	3.6 million (12% of population)	Yes	No	No
New Zealand	0.75 million (22% of population)	Yes	No	No
Norway	N/A	Yes	No	Yes
European Union	50 million (11% of population)[1]			
United Kingdom	N/A	Yes	In Process	No
Denmark	N/A	Yes	In Process	No
Sweden	N/A	Yes	Yes	Yes

Note: 1 Population of the European Union is taken from EuroStat 2004, *European Demography in 2003*, available at http://epp.eurostat.cec.eu.int/cache/ITY_PUBLIC/3-31082004-BP/EN/3-31082004-BPEN.PDF

There are perceptions in Australia's disability sector that the telecommunications disability equipment arrangements in the rest of the world are ten to twenty years ahead of the arrangements in Australia. The research undertaken as part of this study shows that such views are not supported. Some technologies and services for people with disabilities in some other countries are advanced compared to what is available in Australia. However, some other countries do not currently provide national programs equivalent to those in Australia.

Sweden provides some equipment for persons with disabilities that is significantly advanced on what is available in Australia — for example, the videophones provided to people who are deaf. In other countries, the services to support the telecommunications needs of persons with a disability are technologically superior to what is currently available in Australia — for example, Internet and video relay. However, it should be noted that often the equipment necessary to benefit from these services — such as a video camera or a personal computer — must be purchased at the individual's own expense. In other cases, such as in the United Kingdom and in Canada, equipment arrangements vary between counties, local authorities or provinces, and there is no cohesive national policy.

4.7 Findings summary

- Suggestions that the equipment that is available through the equipment arrangements in Australia is 'ten to twenty years' behind the rest of the world is not supported by the evidence examined in this review. Some other countries may have a wider range of telecommunications products available (such as more sophisticated mobile phones that can place calls through a text relay service, web cameras, faster Internet connections, etc) available. However, not all of these products are offered at a subsidised rate or through that country's equipment arrangements.
- Australia's current arrangements for providing telecommunications disability equipment to consumers with a disability is comparable with the best of those in the countries discussed in this report.
- There are examples where other countries provide some items of equipment and/or services for persons with a disability that exceed those currently provided in Australia. In some cases, the subsidised provision of *services* is offered instead of the subsidised provision of *equipment*.
- Some of the more advanced relay services that are offered in other countries (for example, Internet or video relay) are technologically superior to what is currently available in Australia. However, in order to benefit from these relay services, users in most countries must purchase the equipment at their own expense.
- In Europe, the EU has a USO that covers some special arrangements for consumers with disabilities, but these do not include the provision of telecommunications equipment in a way comparable to that of Australia. Sweden and Norway (not an EU member) provide assistance with equipment at a national level and the UK provides limited assistance at a local level.
- Canada and the UK have recently reviewed aspects of their telecommunications arrangements for consumers with disabilities. Some changes are anticipated to the current arrangements in these countries.
- In the USA and Canada, responsibility for assisting consumers with disabilities is shared between federal and state/provincial governments. As a consequence, there is some variability in the provision of equipment and services to consumers with disabilities across these two countries. Neither of these countries has a coherent national strategy that is comparable to Australia's.
- Comparisons between Australia and other countries are difficult because of different national welfare and tax systems that may provide relief for the cost of telecommunications to persons with disabilities. Tax rebates on the purchase of specialised telecommunications equipment may be of limited benefit to the disabled community, where income levels are lower than average.

Chapter 5

Consumer perspectives

This chapter addresses term of reference a(iii). It presents findings on consumer, including potential consumer, views of disability equipment services, and their awareness of, experiences with and attitudes towards the current equipment programs available to them.

The information in this chapter is largely drawn from discussions with eight consumer focus groups, as well as consultations with consumer representative stakeholders. The focus groups took place in March and April 2006, in Sydney, Brisbane, Hobart, Melbourne, Perth, Coffs Harbour, Mildura and Townsville. In total, some 64 participants attended the focus group discussions to talk about their experiences with and knowledge of the current equipment arrangements. Focus group participants were contacted and invited to participate in the review through established disability and carer organisations and associations.

Overall, the focus groups included people with a wide range of disabilities and varying levels of impairment. This enabled the focus groups to provide a broad perspective on questions about the use and effectiveness of communications equipment. Participants were generous in sharing their time and their experiences with the focus groups, and in thinking about some of the factors that they believed would drive future telecommunications needs for consumers with disabilities. Further detail about the focus groups is provided in Appendix C.

The level of awareness among focus group participants about the current equipment arrangements varied in a number of respects:

- in some focus groups, only one or two people were aware of the current equipment arrangements, while in other groups up to half of the participants reported that they know of the arrangements and in at least one focus group, all of the participants knew of the arrangements;
- the level of awareness about the current equipment arrangements was generally higher amongst participants in the capital cities when compared to those taking part in regional locations; and
- participants who were limited in their mobility or dexterity generally had less knowledge about the current equipment arrangements than participants with hearing, vision or speech impairments.

Of the participants that had *some* knowledge of the current equipment arrangements:

- very few had a detailed understanding of what was available and how the eligibility and decision making process worked;
- others showed a more general level of understanding;

- not all participants used telecommunications disability equipment provided through the current equipment arrangements (particularly participants with vision impairment);
- most participants were unaware of related services, such as directory assistance or call connect services;
- some participants were unaware that non-standard equipment is provided on the same basis as a standard telephone rental handset; and
- some participants were unaware of changes or improvements in the equipment — both standard and non-standard — that is currently available.

5.1 Consumer awareness of the current equipment arrangements

Roughly half of the total number of participants involved in the focus groups had some knowledge of the current equipment arrangements and their entitlements to related services. Considering that a significant proportion of the participants were members of a disability organisation or advocacy group, this was a surprisingly low level of awareness. Indeed, participants in some of the focus groups pointed out that awareness among the general disabled community was likely to be much lower. This is in contrast with Telstra's own internal monitoring, which suggests that awareness of Telstra's equipment arrangements — if not the DEP itself — among both Telstra and non-Telstra customers is significantly higher.[104]

A common view expressed by focus group participants was that, if awareness about the current disability equipment arrangements increased, there would be greater demand for such equipment. Outside of the focus groups, some stakeholder organisations suggested that the current equipment arrangements, particularly the disability equipment programs offered by Telstra and Optus, were very well kept secrets. However, both Telstra and Optus undertake promotional activity in relation to their programs, through disability associations, and through magazines and other media targeted at the aged and people with disabilities. Information about the DEPs of these two carriers is also available from their shopfronts, from their call centres and on their websites.

Some focus group participants expressed views that implied that it was the responsibility of carriers, medical professionals or the government, to ensure that consumers were aware of the current equipment arrangements. Some of these participants displayed a relatively poor knowledge of the current equipment arrangements, and a few had not made any enquiries of their own as to what was available. Other participants that had a poor or incomplete knowledge of the current equipment arrangements had made some attempts to contact their carriers directly. In some cases, participants reported that the shopfront or call centre provided them either with incorrect or no information. In a few cases, English was not the participant's first language. Elderly focus group participants whose English was limited reported that they had difficulty navigating the IVR menus, and explaining their needs to the call centre. This problem was exacerbated for people who were hearing impaired, and spoke little English.

[104] Information provided by Telstra.

Other focus group participants expressed views that implied that their knowledge of the current equipment arrangements is based on information that they had sought out and gathered several years ago. One of the most frequent examples of this was in cases where participants reported that Telstra was the only carrier that operated a DEP. Some of these participants had been told at the time that they were ineligible for non-standard equipment, or that there was no product available that would meet their needs. These participants had not subsequently sought to determine whether or not the situation had changed. Outside of the focus groups, one of the clearest demonstrations that people are uninformed about the sort of equipment that is available is the fact that people still apply for volume control phones under Telstra's DEP, even though the volume control is now a feature of Telstra's current standard handset.

Those consumers who participated in the focus groups, and who knew about the current equipment arrangements, generally felt that the available equipment was able to provide them with reasonable access to the STS, but noted that there were some shortcomings. The items most commonly mentioned in reference to what was used, and what was effective, included the standard rental handset, TTYs, volume control phones and big button phones. In some cases, participants provided information about changes or upgrades to the equipment arrangements that would address perceived shortcomings.

For example, one participant said that she could not use a TTY at home because the rest of her family found it to be a nuisance and it interfered with their use of the standard handset. One of the other participants in the same focus group suggested that she could try a Uniphone™ — a product that the first participant had had no knowledge of. In several focus groups, some participants noted that their standard telephone handsets do not meet their needs because they, or someone they live with, is hearing impaired. Other participants in the same focus groups were able to point out that the new standard telephone handset incorporates a volume control that could meet their needs.

Informal networks

All participants who knew about the current equipment arrangements reported gathering some or all of this information through informal networks. The use of informal networks appears to be the most common approach to getting information about telecommunications disability equipment by consumers with a disability. Informal networks were also noted as being the primary source of information about other telecommunications equipment (i.e. not included in the DEP) that could be used by someone with a disability (e.g. mobile phones that could be used with a hearing aid).

As noted by one participant, the benefit of gathering information in this way is that people can learn about what is available, as well as learn from the experiences of friends or colleagues that used particular equipment. People relied on this information to develop their ideas of what equipment might best meet their own needs. On the other hand, information obtained through informal networks was not always accurate or complete. For example, one of the participants had heard about the big button phone, but said that he would not be able to afford it because his only income was a pension — he was unaware that the phone could be rented at the same rate as a standard handset.

Associations and common interest groups

Associations and common interest groups were the next most commonly mentioned sources of information by focus group participants.[105] Some of the associations or groups that were identified included:

- Better Hearing — a non-profit, self-help organisation that provides a community support service of rehabilitation and help for Australia's hearing impaired;[106]
- Deafness Forum of Australia — a peak body for deafness in Australia, which represents all interests and viewpoints of the Deaf and hearing impaired communities of Australia (including those people who have a chronic disorder of the ear and those who are deafblind);[107]
- Vision Australia — a provider of services to people who are blind or vision impaired in Australia;[108]
- Word of Mouth Technology — an organisation that specialises in assistive technology for the Deaf and hard of hearing;[109]
- Blind Citizens Australia — a national association of blind and vision impaired Australians; [110] and
- Australian Association of the Deaf — a national peak organisation for deaf people in Australia. It represents the views of deaf people who use Auslan (Australian Sign Language).[111]

These organisations provide information through newsletters, electronic mail-outs, on-line and telephone forums, list servers, and face-to-face meetings or gatherings. Focus group participants reported being very comfortable approaching such organisations for information about or assistance with selecting telecommunications disability equipment. The same participants also noted that they felt they received a higher quality of assistance, because the staff at these organisations had a better understanding of their specific needs and a practical understanding of the equipment that would best suit them.

105 We note that this response may be an outcome of the project method that relied on the networks of associations and common interest groups to assist in identifying people to participate in the focus group.

106 Better Hearing Australia 2006, *About Better Hearing Australia Inc*, http://www.betterhearing.org.au/aboutbha.htm, accessed on 26 June 2006.

107 Deafness Forum of Australia 2006, *About the Deafness Forum*, http://www.deafnessforum.org.au/, accessed on 26 June 2006.

108 Vision Australia, *About us*, http://visionaustralia.org.au/info.aspx?page=674, accessed on 26 June 2006.

109 Word of Mouth Technology 2006, *Homepage*, http://www.wom.com.au/, accessed on 26 June 2006.

110 Blind Citizens Australia 2006, *Blind Citizens Australia — Frequently Asked Questions*, http://www.bca.org.au/bcafaq.htm, accessed on 26 June 2006.

111 Australian Association of the Deaf 2006, *About AAD*, http://www.aad.org.au/profile/profile.php, accessed on 26 June 2006.

Focus group participants who were either members or affiliates of an association or interest group generally had a better knowledge of what was available and their entitlements. Focus group participants who were members or affiliates of associations for the blind or vision impaired appeared to have a good understanding of what was available for people with other disabilities. Focus group participants who were members or affiliates of associations for the mobility and dexterity impaired had the least knowledge of the current equipment arrangements. This could in part be due to the fact that the big button phone — a product that specifically addresses their needs — is a relatively recent addition to the equipment offered through the DEAs.

Promotional material

The next most common source of information mentioned by focus group participants was promotional material and other publicly available information, such as brochures, advertisements (print and radio) and Internet sites and searches. Participants that knew about the current equipment arrangements mentioned radio and the Internet as their sources of information more often than brochures or printed advertisements.

In two focus groups, participants reported their source of information as being the local radio for the print handicapped which is the national peak body for a network of unique, independent radio reading services striving to meet the daily information needs of over three million Australians with a print disability.[112] One of the participants who mentioned the radio for the print handicapped said that it was the source of almost everything she knew about the current equipment arrangements, as well as other equipment and services for people with disabilities.

None of the participants made any mention of advertisements printed in newspapers or magazines. Focus group participants who were blind or vision impaired made the point that printed material was either difficult or impossible for them to access. Some of the participants mentioned having seen brochures, but one or two said that brochures did not contain enough information, while at least one other participant felt that people would prefer to hear about the information that was relevant to their needs rather than having to read a detailed brochure.

In addition to these issues of accessibility, several participants in one focus group expressed frustration with not being able to find information in languages other than English. Many of these participants were from a culturally and linguistically diverse background, and faced a language barrier in addition to vision and hearing impairment. Of the culturally and linguistically diverse participants, only two were aware of the current equipment arrangements, and only one used the equipment.

Participants who obtained information using the Internet also mentioned it when referring to how they found out about equipment and services outside of the current equipment arrangements — for example, choosing a payment or bundling plan for telephone, mobile or Internet connection, or researching price and functionality of equipment.

[112] Radio for Print Handicapped 2006, http://www.rph.org.au, accessed on 18 May 2006.

Equipment demonstrations

With the exception of those focus group participants that dealt with telecommunications disability equipment in a professional capacity, very few participants had heard about or attended equipment demonstrations or 'road shows'. Focus group participants mentioned organisations that conduct demonstrations:

- Telstra;
- NovitaTech;
- Australian Communication Exchange;
- Independent Living Centres Australia; and
- Better Hearing Australia.

The issue of awareness arose in reference to the demonstrations. When a participant mentioned having attended one, other participants asked when it took place and how they found out about it because they would have liked to have attended, but were not aware of it.

The few focus group participants who had attended the demonstrations said that they were useful, that they had an opportunity to put their hands on the equipment and see and feel it for themselves, and that they were made aware of solutions to communication problems they were experiencing.

Shopfronts

Several participants mentioned that they went to a carrier shopfront to find out more about the current equipment arrangements, and what was available, but none of the participants had succeeded in *finding out* about the program by visiting a shopfront. At least one or two participants in each of the focus groups expressed frustration at not being able to ask for something, the existence of which was uncertain, particularly since the telecommunications disability equipment and the brochures or catalogues are not on display.

A few participants in each of the capital city focus groups mentioned the Aged and Disability Centres that Telstra operated in the past in metropolitan areas. When Telstra closed these centres, the Independent Living Centres filled the information gap, but only to a limited extent. The Independent Living Centres display disability equipment and assistive aids and devices for the aged and people with disabilities. Despite the fact that only one focus group participant reported having been to an Independent Living Centre, several participants felt that the closure of Telstra's Aged and Disability Centres has left an information gap, which is not being adequately met by the Independent Living Centres.

Health professionals

At least two participants noted that they used equipment that was suggested to them by an occupational therapist. In both cases, the equipment was not supplied through the current equipment arrangements. For example, one participant who was severely mobility impaired was looking into purchasing a telephone that could respond to an infrared signal.

While one of the carriers has evidence to suggest that health professionals are the most common source of information, occupational therapists, as a group, may need to be provided with better information, by carriers and by disability groups. In five out of the eight focus groups, participants suggested that health professionals should inform their patients about their eligibility for equipment available through the current equipment arrangements, and the types of equipment that are available.

5.2 Consumer experiences with and attitudes to the current equipment programs

A handful of participants who attended the focus groups and who had knowledge of the current equipment arrangements reported that they did not use any of the equipment offered through these arrangements. These participants were all either vision impaired or blind. Some said that they did not need telecommunications disability equipment, because they found that the standard handset provided them with adequate access to the STS. Others used the standard handset or made their own arrangements for non-standard equipment because they were unable to get the equipment that they wanted under the current equipment arrangements. Three examples are provided below.

- One participant said that he was generally satisfied with the standard handset, but added that it would be useful to have a headset available for blind people through the current equipment arrangements. He said that without a headset, he would need three hands to pay bills over the phone — one hand to read the Braille bill, one hand to key numbers on the phone, and one hand to hold the handset.
- Another focus group participant who was also blind noted that people who were mobility impaired could acquire a cordless phone through the current equipment arrangements, but that people who were blind were not eligible. She added that blind people also faced a mobility challenge in getting to a ringing telephone before the caller hung up.
- Two participants in different focus groups raised the issue of ‘calling number display touch-phones’, or telephones that had a built-in display that showed the number of the caller, noting that these were inaccessible to people who were blind or vision impaired, and equipment with an equivalent function had to be separately purchased.

Carriers

The majority of the participants that attended the focus groups were Telstra customers. While their reasons for choosing Telstra varied, most of these participants said that their choice was related to their knowledge of what Telstra offered, and the services that Telstra offered in addition to the equipment (for example, free directory assistance, Braille bills, and a disability help line).

While other carriers have wholesale arrangements with Telstra and can arrange for similar or equivalent equipment and services, focus group discussions revealed only limited knowledge of these arrangements. More than one participant expressed a view that they really had no choice of provider, because they felt that there was a limited range, if not complete lack, of services and equipment offered by other carriers.

Some of the focus group participants had some knowledge of the equipment and services offered by other carriers. Some acknowledged that their information could be dated, and things may have changed. Participants also recognised that they were gradually becoming more aware of the equipment and services available from other carriers, and some participants considered them to be reasonable alternatives. The increased uptake of billing via email or on-line, while not specifically introduced to address the needs of the consumers with disabilities, were mentioned as useful services that made some carriers more appealing.

Some participants expressed the view that they could only get adequate service if they remained with their current carrier — not because of the equipment or services on offer, but because they had an established relationship with the carrier. Participants reported that the staff they knew had come to understand their needs and occasionally 'went the extra mile' to assist them. As a result, they were reluctant to change to another carrier and lose this goodwill.

The *DDA* obliges carriers that provide equipment with their service to arrange for telecommunications disability equipment for their customers, except where this would result in unjustifiable hardship on the provider. However, the experiences of the participants in the focus groups, in addition to material provided by disability organisations, demonstrate that there is a perception that this obligation is not always met. For example, the study conducted by WWDA, referred to in Chapter 3 of this report, suggests that unless a consumer knows their rights and what they are entitled to, it is very difficult to obtain information from carriers about how to apply for non-standard equipment.

This finding was supported by the experiences reported by focus group participants. It was clear that there was confusion in regard to what is provided by the different carriers, and what the entitlements are. Four or five participants mentioned that they had switched from Telstra to an alternative carrier, but encountered problems with the equipment rental or the service that they felt could not be adequately resolved, and so reverted back to Telstra. In two of these cases, participants that switched back to Telstra chose to return because they felt that Telstra provided them with better service. On the other hand, another two participants reported that they felt trapped as a result of their experiences. There were also examples of focus group participants seeking to switch to other carriers, only to find that not all provide equipment as part of their service.

One of the most common reasons given for selecting a given carrier was cost. Some of the focus group participants considered that the lower charges offered by some carriers outweighed the fact that these carriers did not provide telecommunications disability equipment, or any specific services aimed at facilitating their access to telecommunications.

Some carriers that are not obliged to provide non-standard equipment hire equipment from the Telstra DEP and make it available to the consumers that need it. However, they pass on the full cost of the equipment hire to those consumers. As a result, a consumer switching from Telstra to one of these carriers can have the monthly cost of their equipment rental increase from about $3 to more than $30. One of the focus group participants reported having such an experience when he tried to take advantage of a telephone and broadband bundle offered by a carrier that did not offer a standard handset with its STS.

Carriers that are not obliged to provide non-standard equipment may be able to offer better deals or lower costs per service *because* they do not absorb the costs associated with providing non-standard equipment at an artificially low price. By the same token, costs per service offered by carriers who *are* obliged to offer non-standard equipment may be higher because those carriers must recover the costs of providing expensive, non-standard equipment. Since they are unable to recover these costs by directly charging the consumers that use the non-standard equipment, they may instead charge higher fees per service.

Effectively, consumers with disabilities are forced to choose between cheaper services — which are often bundled to include the STS, mobile phones and the Internet — or cheap equipment rental. This is a trade-off that is faced by all consumers, however, due to the high cost of telecommunications disability equipment, consumers with disabilities feel that they are trapped into subscribing to services from carriers that offer non-standard equipment at a lower rate, while charging a higher rate for services. As discussed in section 9.2, one of the benefits of a sole supplier of telecommunications disability equipment would be to separate the provision of the equipment from the provision of the service. While this would address this particular disparity, there are a number of other implications to this separation that would need to be considered.

Service plans

As demonstrated above, the provision of equipment cannot always be separated from the provision of the service. Consumers with disabilities must consider the trade-off between the cost of equipment rental and the cost per service. Some of the focus group participants considered that there were good deals available with carriers that bundled together one or more services (for example, fixed line, mobile phone, dial-up or broadband Internet, etc). However, other participants had deliberately chosen not to purchase a bundle of services because they felt that the mix of services did not match their usage. This made them more reliant on their STS, and on their disability telecommunications equipment, because they felt that they could not make the best use of products such as mobile phones or the Internet as a result of the expense associated with their levels of usage.

Two of the participants in one of the focus groups provided anecdotal evidence on differences in usage habits for people with certain disabilities, although this evidence was not supported:

- deaf people use SMS ten times more than other people (in fact, young people are probably the biggest SMS user group);
- a call made from one TTY to another TTY can take seven times as long as a voice to voice call which adds to the cost of STD calls; and
- it takes a blind person eight times as long to search a web page (using screen reading software, or a Braille display) than it would take a sighted person.

One focus group participant raised an issue about the time taken to make a TTY-to-TTY call. A call made through the NRS is charged at the price of a local call, even if the relay operator facilitates a conversation between people on opposite sides of the country. However, if a TTY user calls another TTY user directly (that is, without calling through the NRS), then they are charged at the same rate as if it were a call made from one standard handset to another. Consequently, people making a TTY-to-TTY call between different regions pay an STD rate. The participant felt that this was unfair, because conversations take longer, due to the limitation on the transmission speed of TTY messages. As a result, he thought that many people resort to other forms of communication — such as email or fax — to avoid the high cost of TTY-to-TTY STD calls. TTY users have the option of calling one another through the NRS (and therefore only paying the price of a local call). There is a trade-off between the increased cost of the call, and greater assurance that the conversation is private.

It was suggested that the service bundling offered by carriers neither reflected the broad usage need of people with disabilities, nor were they flexible enough to accommodate these needs. As a result, people with disabilities, who are unable to afford access to mobile phone or Internet services in the quantities that match their communication preferences, are forced to rely on the fixed line telephone. The disability telecommunications equipment is seen as providing less-than-ideal access for their needs and requirements.

Eligibility for telecommunications disability equipment

Focus group participants had mixed experiences in regards to the issue of their eligibility for equipment. One participant, who was severely hearing impaired, related an experience where she called a carrier to enquire about disability equipment but was told she would not be eligible for a TTY because she could obviously speak. In response to this, another participant at the same focus group said that her carrier's enquiry line had provided incorrect information regarding her eligibility for equipment. Participants at that focus group reported that such an experience could result in people feeling that a carrier had rejected them, and they could be discouraged from applying again.

There was also some level of dissatisfaction with the fact that under any of the DEPs, it was generally only possible to have one rental item provided through the arrangements. This limitation, however, is the same for the general community wanting to rent standard equipment. Some exceptions are made to this broad rule, such as providing a big button phone *and* a cordless big button phone to people who are mobility impaired. However, the focus group participants who might be eligible for this were unaware of the possibility. One of the focus group participants, who was severely mobility impaired, said that she had installed five telephones around her house, all at her own expense, and was still unable to answer all of her incoming calls. She had no knowledge of the current equipment arrangements, or that she could hire a cordless telephone on the same basis as a standard handset.

Installation, repair and maintenance

Generally speaking focus group participants were satisfied with the level of service regarding the installation, repair and maintenance of telecommunications disability equipment. One participant had sent faulty equipment back and had received a replacement phone from their carrier the next day. They found it a very straightforward and simple process. Another participant required repairs for their Internet connection and received good service from the carrier's technician. It was noted that they had let the carrier know of their disability and that the Internet connection was important.

Others did not report such positive experiences. In one case, a piece of equipment supplied by a carrier was provided as a replacement but 'fell apart within three months'. When another replacement was requested, the carrier was said to have responded by saying the product was no longer available. She was offered another product. However the replacement did not have the same features as the equipment it was replacing — the acoustic couplers were a different shape — and she found it was not as effective.

Some participants had experienced problems with their telephone network, which had taken a while to fix, but there were no problems identified with the time taken to repair or replace equipment. Some of the participants, who were customers of carriers other than Telstra, claimed that it took longer for a Telstra technician to attend to their infrastructure problems (that is, with the cabling or the network) than if they had been a Telstra customer. However, it was acknowledged that this could also be due to delays in their carrier reporting the fault to Telstra.

Adequacy of service provided

There was a mixed response from participants in relation to services provided by staff at carrier retail outlets/shop fronts. Some found the staff to be helpful, but that there was limited equipment on display in the shops. Others found the knowledge of staff about equipment programs and the available equipment to be very limited. It was also perceived that there was a general lack of knowledge about equipment that might be useful to someone with a disability but was not was not part of the current equipment arrangements. This applied to mobile phones and to particular features available on standard equipment.

For example, one of the focus group participants called his carrier to find out about mobile phones that would be compatible with his hearing aid, but spent four hours on his TTY while the NRS operator attempted to track down the correct department at the carrier. He was subsequently told that no information was available over the phone, and that he would need to go to a shop front.

Several disability organisations noted that some of their members might feel intimidated by the loud music or visual displays in carrier shopfronts. They added that many of the shopfronts were designed and fitted out to target a particular market (such as young people or professionals). As a result, they perceived that shop front staff members are trained to assist with queries in relation to newer, more profitable products.

Telstra's disability help-line was mentioned as being very helpful. More than one participant felt that unless they identified themselves as having a disability, they were 'rushed' by call centre staff who answered the general (and not disability specific) enquiry lines of carriers. These staff sometimes tried to tell them about products they were not interested in, such as broadband or mobile bundling. This was reported as being particularly frustrating for people who had trouble following what the call centre staff were saying, either because the caller was hearing impaired, did not have good English, or both. General customer support services provided by carriers were therefore not considered to suit a person with a disability because in addition to these difficulties, many people found that it was time consuming and frustrating to work through the voice menus and find the appropriate department.

Consumer attitudes

A number of participants felt that the disability equipment list was outdated, in reference to both the regulations, and to the products offered by particular DEPs. Other participants felt that more transparency was needed with regard to how the list was updated, particularly the decision-making process about what did and did not get added to the list, and why. Some of the participants who had some knowledge of the current equipment arrangements expressed a view that both the equipment list and the definition of the STS needed to evolve in line with emerging technologies, and general community telecommunications usage. Some of these participants had been involved in consultations or trials in relation to possible additions to the equipment list, and felt let down that they were not informed of when the equipment would be added to the list, or why a decision was taken not to add the item.

Another participant felt that the visual alert — an add-on piece of equipment that advises someone that they have an incoming call by switching an appliance[113] on and off — was 'not a great piece of equipment'. Her reasoning was that someone who was deaf or hearing impaired would need to be in the same room as the visual alert to know that their phone was ringing. While the participant did not suggest a solution, one possible alternative to the visual alert could be a mobile pager set to vibrate when the phone rings — that way, someone who was deaf or hearing impaired could carry the pager with them and know the phone was ringing regardless of where in the house they were. The New Zealand equipment provider offers a similar solution.

Some participants commented on community consultation arrangements. The consultative forums related to DEPs are a means for consumers to advise the carrier about their equipment needs, wants and preferences. However, what does and does not make it onto the equipment list is ultimately the decision of the carrier. A handful of participants felt that there should be more transparency with regards to these decisions. However, the results of market research, consumer forums and equipment trials are commercially sensitive and carriers would be understandably reluctant to share this information.

[113] The appliance is not provided. Usually, people attach the visual alert to a lamp, which announces an incoming call by flashing on and off.

A number of participants felt that, with the exception of people who were hearing impaired and people who were able to use the standard rental handset, the telecommunications disability equipment that was currently available did not meet the needs of people who were severely vision or mobility impaired. For example, three focus group participants were partly paralysed and were unable to use the telephone independently. One of them was in a motorised wheelchair that had an instrument panel that he could manipulate, and that could send infrared signals to a range of equipment such as the television, video, and computer. He noted that telephones that responded to infrared signals were expensive, but he did not have any knowledge of the current equipment arrangements or the auxiliary switch that could be attached to a big button phone — as a result, he was unsure as to whether or not the equipment would allow him to independently use his telephone.

5.3 Findings summary

- Consultations with consumers found a surprisingly low level of knowledge of disability equipment arrangements. Around 50 per cent of focus group participants had some knowledge of the current equipment arrangements. This was lower than expected, since many participants were associated with disability organisations.
- Focus group participants who were mobility impaired had the least knowledge about the current equipment arrangements compared to other consumers with disabilities. Information about disability equipment arrangements needs to be better communicated to the relevant health service providers and support organisations for this disability group.
- Some consumers have misunderstandings and misconceptions about Australia's disability equipment arrangements. This is a sign that the ways in which information is provided need to be improved. Participants raised instances where they had grown frustrated with trying to obtain information, or were provided with incorrect responses to their questions. While some people were unable to obtain the information directly from their carrier, it was also clear that some participants either had not sought information directly from their carrier, or they were relying on information that was out of date.
- Informal networks are the most common way people access information about telecommunications disability equipment. Sometimes the information that is gathered through these networks is incorrect, incomplete or out of date. This is a problem because people may decide not to apply for telecommunications disability equipment because they have heard that a product is not available, or that they are not eligible.
- Consumers want a more structured approach to the provision of information about telecommunications disability equipment. However, there was no consensus on the best way to provide information. It is clear that individual consumers are more receptive to different forms of information communication, and no single approach will meet all needs.
- The experience of focus group participants suggests that staff at the carriers' shopfronts generally have little knowledge of products or services that can assist consumers with disabilities, and little understanding of the needs of consumers with disabilities. Information about how to apply for equipment or whether or not the person enquiring is eligible to hire non-standard equipment was reported to be difficult to obtain.

Chapter 6

Consumer views on access to new technologies

This chapter partly addresses term of reference a(iii). It presents findings on consumer, including potential consumer, requirements for access to new and emerging technologies and services over the next 5 to10 years.

In thinking about their requirements for access to telecommunications over the next five to ten years, the requirements of focus group participants tended to centre around:

- awareness about the equipment arrangements — both in relation to people with disabilities, and the wider community;
- what sort of equipment is available — both through equipment arrangements and for general purchase — in other countries, with some participants claiming that arrangements in Australia are lagging;
- concerns about the limited accessibility of mobile phones and other, away-from-home real-time communications devices; and
- a strong desire to put mechanisms in place to ensure expansion of the equipment list in line with the mainstream take-up of new technologies.

A number of consumers with disabilities have clearly invested time and money in a range of technologies to support their telecommunication needs. This group is strongly supportive of making greater use of emerging technologies to meet the communication needs of people with disabilities. On the other hand, some stakeholders strongly cautioned against developing technologically advanced communications equipment. Disability groups and focus group participants reported that there is a significant group of people (particularly older people) that strongly resist the uptake of new technologies. More specifically, some focus group participants felt that if all new equipment was 'high-tech', then those who were fearful of new technologies could have their capacity to communicate diminished.

6.1 Effectiveness of the current arrangements in relation to other telecommunications products and services

In addition, to the changes in the way the STS is used, mobile phone services and Internet subscriptions have increased considerably, meaning that the relative importance of the STS for day-to-day communications is diminishing. Over the last five years, for example, fixed-line telephones as a proportion of both fixed-line and mobile phones has fallen from around 57 per cent in 1999-2000 to around 38 per cent in 2004-05.[114]

[114] Australian Communications and Media Authority 2005, *Telecommunications Performance Report 2004-05*, Melbourne, p. 1.

The number of mobile phone services has more than doubled over the same period, and Internet subscriptions have grown from 3.4 million to 6.0 million.[115] On the other hand, the household penetration rate of fixed-line services remains high, at 95 per cent,[116] showing that while people are making use of alternative forms of communication, such as SMS or email, ultimately, most households and most businesses still have a fixed-line service.

Box 6.1

DISABILITY ISSUES WITH MOBILE PHONES

Some of the issues with mobile phones faced by people with disabilities include:

- lack of Braille output for someone who is blind or deafblind;
- lack of a real time communication channel for someone who is deaf;
- expense associated with configuring speech output software for someone who is vision impaired or blind;
- small or insufficiently lit screen that is difficult for a vision impaired person to see;
- limited number of mobile phones that are compatible with a hearing aid — for example, mobile phones on the GSM network create a disturbance;
- limited number of phones that are compatible with a neck-loop or induction plates that can be used by someone with a hearing aid;
- small size and small buttons that are not sufficiently raised or separated from one another, making it difficult for someone who is blind or dexterity impaired to use; and
- overly complex functionality that confuses those who have difficulty learning to use new technologies.

Upgrades to existing products have also been introduced over this period. Internet connections have evolved past the PSTN, and can now be delivered wirelessly, as well as via satellite, allowing people to upload and download content to and from the Internet at ever increasing speeds, and at a greater number of locations. As the take-up of these increased connection speeds has grown over time, the content offered on the web has also expanded. Songs, film clips and entire television shows and movies can now be downloaded from the Internet at a relatively fast and affordable rate, using a home computer and an Internet connection. While these speeds are available to all Australians, the method of delivery varies, as does the associated cost. Nevertheless, the speeds available are sufficient for some people to conduct video calls using Auslan (Australian sign language) or lip-reading.

At the same time, the functionality of mobile phones has also increased. Even mobile handsets at the lower end of the market now incorporate a camera, in addition to the expected mobile phone functions such as calls and the Short Message Service (SMS). Some of the mobile phones at the higher end of the market incorporate email, web-browsing, organiser and word and data processing functionality.

[115] Australian Communications Authority 2005, *Telecommunications Performance Report 2004-05*, Melbourne, p. 1.

[116] Australian Communications and Media Authority 2005, *Chapter 2 — Fixed Voice Services*, http://www.acma.gov.au/acmainterwr/_assets/main/lib100131/chapter%202%20-%20fixed%20voice%20services.pdf#search=%22fixed%20line%20penetration%20rate%20site%3Aacma.gov.au%22, accessed on 11 September 2006.

More recently, there are a number of handheld products that combine mobile phone, personal organiser, email and web access in the one device. While these products and services are not always widely available or affordable, they have many applications that can be used by some people with disabilities without the need for non-standard equipment.

The Internet provides a range of communication options that are relatively more accessible to people with disabilities, such as web browsing, email and instant messaging. Once again, some people with disabilities are able to use these applications without any particular add-ons, software or equipment. Others may lack the mobility or dexterity necessary to use the keyboard and mouse, or may be unable to see the display on the screen. Where this is the case, there is often equipment and software that can assist these people to use their computers on an equal basis, but these add-ons — such as speech output software, voice recognition software or Braille displays — are quite expensive.

Some people with other sorts of disabilities — such as people who are vision, mobility or dexterity impaired — are unable to use mobile phones or computers without add-on equipment or software. Examples include software that magnifies text on the screen, software that reads the screen in a synthetic voice, voice recognition software, and Braille displays.

Box 6.2

DISABILITY ISSUES WITH COMPUTERS

Some of the issues with computers faced by people with disabilities include:

- expense associated with configuring Braille output for someone who is blind or deafblind;
- expense associated with configuring speech output software for someone who is blind or vision impaired; and
- expense associated with configuring voice recognition software for someone who is mobility or dexterity impaired.

The USO only applies to the STS and payphones, and not access to mobile phones or the Internet. Consequently, there is no obligation for suppliers to offer subsidised equipment or software add-ons so that consumers who are unable to use a standard mobile phone or computer, can effectively access these forms of communication at reasonable cost.

Most people are able to choose a mobile phone or an Internet connection for their needs and for their budget from a wide range of options. The number of options that meet the communication needs of consumers with disabilities is often smaller, and more expensive. In addition, add-on equipment and software is either expensive in its own right, or only compatible with a more expensive standard product (for example, only the more expensive mobile phones are compatible with screen reader software), or both.

In addition, businesses are changing they way they operate so that it is often cheaper or faster to conduct transactions over the Internet. People who are unable to access the Internet cannot benefit from these arrangements. Consumer representative stakeholders acknowledge that mobile phones and computers are 'added value services', since they are not part of the USO, but go on to say that someone with a disability usually has to 'add *more* value' in order to get equivalent access to these technologies.

There are two aspects to the high cost of some equipment, software and services:

- The average person with a disability is on a lower income than someone without a disability. In 2003, 51.3 per cent of people between the ages of 15 and 64 that had a disability were either unemployed or not in the workforce, compared to 23.5 per cent of people in the same age bracket that did not have a disability.[117] The average (median) gross personal weekly income of someone with a disability was $255, which was only just over half the average (median) gross personal weekly income of someone without a disability.[118]
- In many cases, equipment or software has to be paid for up-front. For example, many mobile phones can be purchased on a 12 or 24-month payment plan. A blind or vision impaired person who requires speech output software for their mobile phone is not currently able to bundle the cost of the software into the payment plan. Given the high, up-front costs, some people might be reluctant to invest in adaptive technology or software, particularly since the rapid advances in technology means that a mobile phone purchased today might be obsolete in two years time.

There is a question of whether the problems with access to telecommunications products for someone with a disability is due to their disability or whether it is due to the high cost of the equipment. After all, it should be noted that consumers who do not have a disability, but who do have a low income, face the same risks of exclusion. On the other hand, it is also true that with regards to some equipment, more expensive products are required *because* the cheaper or standard product is unsuitable for someone with a disability — as is the case with certain mobile phones that are compatible with add-on software, or broadband connections of sufficient speed and with a reasonably high download limit for signing or lip-reading. As long as this is the case, the reliance of consumers with disabilities on their STS or payphones is reinforced.

The current arrangements as described in Chapter 2 are not effective in meeting the needs of some consumers with a disability outside of the STS. However, modifying the current regulatory and legislative framework may not be the most appropriate way in which to address these needs. The current arrangements focus on the provision of non-standard equipment to consumers who are unable to use standard equipment to access the STS.

[117] Australian Bureau of Statistics 2004, *Disability, Ageing and Carers 2003, Australia*, cat. no. 4430.0 AusInfo, Canberra.

[118] Australian Bureau of Statistics 2004, *Disability, Ageing and Carers 2003, Australia*, cat. no. 4430.0 AusInfo, Canberra.

Extending the scope of the USO to include mobile phones and the Internet would not directly address the income inequity. Secondly, if the scope of the USO were extended in order to guarantee reasonable access to mobile phones and broadband on an equitable basis, this guarantee would have to apply to all Australians, and not just to those with a disability. The costs of extending this sort of guarantee to all Australians regardless of where they may reside or carry on business would be high.

6.2 Information and awareness

The lack of awareness of the current and future equipment options was identified as a major issue from the focus group discussions. This lack of awareness extends to people other than those who might be eligible for disability equipment, such as relatives and friends and to business and service providers. Issues raised included:

- Two or three participants out of all the focus groups mentioned that several businesses now used VoIP technology to make telephone calls, and that the sound quality of the phone call made it difficult for them to follow the conversation. One participant added that since most of her VoIP calls came from call centres that were 'trying to sell her something she didn't want', she did not feel bad hanging up on them, but noted that as more people started to take up VoIP as an option, the imperfect sound quality would have more of an impact on her capacity to communicate over a fixed line telephone.
- One of the Deaf participants expressed frustration that the staff at a bank call centre would not accept transaction details provided by an NRS operator, and that they wanted to 'hear his voice saying who he was' — something he was not in a position to do. The point that was made was that there was no problem with the TTY or with the NRS, but that it was necessary to promote greater general awareness about these products and services so that other people would have a greater understanding of what the limitations were. Without this, it was not possible for him to use his TTY to perform the same functions that people took for granted with their phones, subsequently reducing the effectiveness of the TTY.
- One stakeholder mentioned a taxi company that would notify customers of arrival by sending an SMS so that the caller would know to leave their building to meet the taxi, but was unwilling to consider alternatives — such as calling the number — for mobile phone users who were blind or vision impaired.

Another issue that was raised in relation to changes in the way businesses operate is that most phone calls are answered and screened by automated menus. While this business practice also affects people who do not have a disability, several focus group participants noted that they could be 'timed out' of the menus for one of the following reasons:

- Deaf or hearing impaired people calling through the NRS rely on the NRS operator to key the menu options to them, and there is sometimes not enough time to read all of the options and choose accordingly; and
- people with limited dexterity have a similar problem, as they may have trouble keying in a long string of numbers — such as a credit card or a customer reference number — before the menu times out.

Additionally, once the menu times out, people are placed in a queue to speak to an operator at the company or business that they are calling. Often, operators are not immediately available, and as a result, transactions or enquiries take longer to complete. The other alternative is to 'restart' the menu, by ending the call and starting again. Other options for completing the same transactions included going on-line, or visiting the business in person, however, some people with disabilities are unable to take up these options due to accessibility or mobility issues.

Once again, it was noted that the problem was with business practices, and *not* with the telephone, the telecommunications disability equipment, or with the NRS. However, due to the change in business practices, it was observed that:

- the fixed-line service is not as useful as it was previously; and
- some people with a disability are unable to benefit from the time and cost savings that other people enjoy when using the telephone or the Internet to complete transactions or enquiries.

6.3 Equipment

There is a significant usage by people with disabilities of telecommunications equipment outside of the current disability equipment arrangements. Some of the equipment and software mentioned by participants in the focus groups included:

- mobile phones and SMS;
- speech output software for mobile telephones and computers, screen reading software for people with vision impairment and voice recognition software for people with vision or mobility impairment (e.g. JAWS®, TALKS, ZOOM, and Dragon Naturally Speaking);
- video telephony (using mobile phones and web-cameras) for conversation using Auslan; and
- computers and standard products such as the Internet, email, and instant messaging services.

Although participants were generally positive about the technology options available to them, they felt that the equipment and the necessary software could be prohibitively expensive to many people with disabilities. For example:

- the minimum cost of a mobile phone that can be used with speech output software is approximately $900, not including the speech output software that costs around $350; and
- the cost of 'JAWS', a screen reading software program, is around $1500.

Several focus group participants acknowledged that new technologies were initially expensive, and that the price of the equipment and the services would fall over time. A study commissioned by HREOC in 2003 found that the cost of communication via SMS was high. The price of phone calls was included in monthly fee,[119] but SMS usage was charged on top of the monthly fee.[120] This has since changed, with carriers offering mobile phone plans that incorporate calls, SMS and/or MMS within the monthly fee, or offering a number of free SMS or MMS when customers bundle their mobile and fixed phone services.

Mobile phones

There are a number of disability considerations in relation to mobile phones. The first is that obtaining information about what sort of mobile phone is suitable or usable can be challenging, particularly when the customer has difficulty communicating with, or physically getting to the supplier. Other issues that were raised by focus group participants are listed below.

- Not all mobile phones can be easily used by someone with a hearing aid, because certain models of mobile phone cause interference with hearing aids.
- Not all mobile phones can be easily used by someone who is dexterity impaired. Some mobile phones are too small, and their keys are too close to one another for someone with limited dexterity to use.
- Not all mobile phones can be easily used by someone who is blind or vision impaired. The mobile phone needs to be large enough that the keys have enough space between them so that the beginning and end of each key can be differentiated by touch. Some people who are vision impaired benefit from having a mobile phone that has a large, bright screen and high contrast menus. Two of the focus group participants said that they used a standard mobile phone that did not have speech output software, and that they used them by memorising the numbers they called most frequently. They were also able to send SMSs, however, they noted that their SMSs were not always correct because they could not see the message they were inputting, and they added that they could not read the SMS they received independently.
- Not all mobile phones can be easily used by someone who is intellectually impaired. One of the participants of a focus group was a carer for people with intellectual impairment, and noted that a simplified phone, or one with only basic features would be useful. She had no knowledge of the currently available 'simplified' mobile phones.

[119] Depending on the value of the plan, and usually with a specified maximum.

[120] W. Jolley 2003, *When the Tide Comes In: Towards Accessible Telecommunications for People with Disabilities in Australia*, discussion paper commissioned by the Human Rights and Equal Opportunity Commission, June, p. 81.

Focus group participants noted that it was difficult to obtain information about the relative costs and benefits of different types of mobile phones, because carriers' shop-front staff did not have a good understanding of the communication limitations or needs of someone with a disability. One example that was provided was that shop-front staff frequently confuse 'speech output' with 'voice recognition'.[121] Some participants reported that a lot of the information that was provided was in a printed format, making it relatively inaccessible to people with a vision impairment.

For consumers who are hearing impaired, and who use a hearing aid or have a cochlear implant, one of the key concerns was having access to information about what sort of mobile phones they could actually use without encountering interference. These users were adversely affected when mobile phone networks switched from using an analogue signal (AMPS) to using a digital signal (GSM), because the new mobile phones caused interference with their hearing aids. As a result, these users are concerned that subsequent changes to mobile networks and handsets — in particular, the move to the third generation (3G) network and mobile phones — may not take their needs into consideration. Both Telstra and Optus note that they have provided trial 3G handsets to users, and that their testing indicates that 3G mobiles will be suitable for use by people with hearing aids.

In addition to concerns about interference with the network, customers that are hearing impaired also need to consider whether they will need a mobile phone that is compatible with a neck loop or induction plates. Both of these products are add-ons that facilitate the use of a mobile phone by someone with a hearing aid. In practical terms, neck loops are quicker to connect, because they loop around the user's neck and back into the mobile phone. Induction plates, on the other hand, are similar to earphones, and they hook onto a user's ears. While they are also effective, they are less practical because a user must take care to prevent the wires from tangling. One user noted that he sometimes missed calls because he had to untangle and place the induction plates. The neck loop worked with about forty mobile phones, while the induction plates could be connected to a much wider range of mobile phones using adaptors, however, obtaining information from carriers about which phones are compatible with which aid is not always straightforward.

One or two focus group participants also felt that carrier shop-front staff were impatient with the questions that they asked, and were not interested in helping the customer select a product that was suitable for them, or modifying the product. This demonstrates that someone with a disability may potentially be unable to use standard equipment in a way that overcomes some of their communication difficulties, because it is difficult for them to obtain this information from technical staff. Two focus group participants reported having issues with:

- the number of times a mobile phone rang before it diverted a call to voice mail; and
- the pitch of the ring tone.

[121] 'Voice recognition' software responds to spoken commands. 'Speech output' software reads selected text out loud.

These were problems that could have been easily resolved, since there are mobile phones that can be adjusted so that they ring for longer, and there are mobile phones where the ring tone can be modified, or a suitable ring tone can be downloaded and applied. In both cases, the participants were not easily able to obtain the information they needed to address the issues they had with their mobile phones.

The second consideration was that for some people with a disability, their mobile phone was the *only* way they could independently stay in contact when they were away from home, particularly if there were no suitable public phones available. As a result, while the following issues affect all mobile phone users, focus group participants had particular concerns about:

- SMS messages not always being received as soon as they are sent, and the sender not receiving confirmation of receipt; and
- reception and network coverage not always being reliable.

Two of the participants who were deaf used the new mobile phones that operate on the 3G network. They reported that they had experimented with the technology to have a video conversation using Auslan. People who were hearing impaired said that they would also benefit from video calls because they would be able to see the other person, which would enable them to lip read and listen at the same time. Currently, these options are limited by the following factors:

- the speeds available are not fast enough for Auslan conversations, and signing must be slowed down or repeated to get through;
- the visual output lags the sound output, making it difficult for someone trying to match what they were hearing with what they were lip reading;
- the clarity of the picture depended on lighting, and there being a stable surface to balance the phone on; and
- the cost of a video call.

Nevertheless, some of the deaf and hearing-impaired participants were optimistic about video technology, although they were wary of the likely costs associated with making a video call as compared to a voice call.

Payphones

Some of the participants who were hearing or speech impaired did not feel comfortable using public pay phones, either because they were unable to hear or speak, or because they had trouble hearing because of background noise. These participants reiterated that they relied on their mobile phones for communication away from home, and that they felt helpless when there was no network coverage.

The majority of stakeholders identified that public telephones and public TTYs were hard to utilise for people with a disability, however, people with different disabilities had different needs, which made it difficult to develop a solution that would suit everybody. For example, people in wheelchairs were unable to reach public telephones that were designed and positioned to be used by a standing person, and their disability groups want there to be more public phones that are at a level that they can use.

On the other hand, someone who is blind has learned to use a public payphone that is set at a particular height, and would have trouble using a phone that had been lowered. Additionally, street public payphones that were not completely encased in a booth (that is, phones that were set on top of a post and incompletely surrounded by glass or plastic) were a hazard for blind people. This was because the phone's casing did not reach the ground, so it could not be sensed by a white cane or by a guide dog. One of the blind focus group participants had actually walked into the glass or plastic casing at some speed, and knew of one or two other instances where something similar had occurred.

In order to assist providers of payphone services, HREOC and ACIF are in the process of developing a 'Payphone Accessibility Code', which has been released in draft form.

> The guideline states that payphones should be installed so they can be more easily accessed by people with wheelchairs or other mobility aids; they should have features including volume control so that people with hearing impairments can use the phone; and they should have other features such as keys that are recessed or concave, with clear lettering and/or numbering that allows easy use for people with vision impairments or other physical disabilities.[122]

Video phones

Three deaf participants reported that they used web cameras that were connected to broadband, and that they were able to use these cameras to have conversations over the Internet using Auslan. They said that amongst themselves — people who could sign, and who had access to a web camera — they much preferred conversations using the web camera than those conducted using their TTYs. Their preference for conversations using the web-camera over conversations using TTYs was due to the following reasons:

- they were able to converse in their first language (Auslan);
- they were able to see the other person's facial expressions and body language — something that is particularly important for Auslan users, since many cannot hear inflections or tones in someone's voice, and this information is not easily reflected across a TTY; and
- conversations were faster and more fluid, since they did not have the stop-start 'stop keying'/'go ahead' nature of a TTY conversation, and the number of 'words' per minute was higher than if using a TTY.

When asked if they would prefer to use a web camera *instead of* a TTY, one of the participants responded that deaf people would continue to need a TTY or something similar, because hearing people continue to use telephones. She added that she could only communicate using her web camera with another person who had a web camera who could also sign. In order to talk to people who could not sign or did not have a web camera, she would still need to use her TTY and the NRS.

[122] Australian Communications Industry Forum 2006, *Media release on Payphone Accessibility Code*, http://www.acif.org.au/__data/page/15739/AF085PR_Accessibility_of_Payphones.pdf, accessed on 8 September 2006.

Teletypewriters

One of the major limitations perceived by almost all of the TTY users that attended the focus groups was the lack of a portable or mobile access to the STS. Printacall advised that in an emergency, a TTY could be disconnected from the telephone line, carried out of the house and used by placing the handset of another phone (such as a pay phone or other public phone) onto the audio couplers, and calling the NRS. The Superprint and the Minprint are fitted with rechargeable batteries that continually charge while the TTY runs off mains power when used in the home. When used away from home, Printacall estimate the batteries can provide the TTY with power for up to an hour.

None of the TTY users that attended the focus groups mentioned using a TTY in this manner. This may have been because:

- the focus group participants that used a TTY used a Uniphone, which does not have acoustic couplers and therefore cannot be used in this manner; or
- because the Superprint and Miniprint are not designed to be used as a portable communications device, and that they cannot be easily or practically transported on a regular basis without risking damage to the equipment.

At a number of focus groups, participants made the observation that the equipment available in Australia is not as good as equipment in use overseas. For example, video telephony and video relay are available to people with a disability in both Sweden and some areas of the United States. Additionally, people in some other countries had access to mobile relay communication through the use of more sophisticated, standard handheld devices,[123] such as the Nokia 9210, the Blackberry™ or the Sidekick™. One or two of the participants who were blind or vision impaired noted that it was possible to obtain a mobile phone bundled with speech-output software on a plan in other countries. One of the examples given was Vodafone in the UK, where a standard mobile is provided on a two-year plan, or bundled with speech-output software on a three-year plan.

It is likely that focus group participants' perceptions that Australia is 'ten to twenty years behind the rest of the world' is due to the availability of equipment for purchase in the manner described above. The more sophisticated mobile phones are not provided through an equipment distribution program in the countries discussed in Chapter 4, however, many focus group participants were frustrated by the fact that they were often not available for purchase in Australia (for example, portable TTYs), did not have the same functionality as they did overseas (for example, connection to a relay service using a Nokia 9210) or were not available for sale on the same basis (for example, mobile phones that are bundled with speech output software, which can be paid off over a number of months). While this is not directly related to the supply of telecommunications disability equipment — all of these items are standard products — it is clear that many consumers with disabilities are frustrated that the current arrangements do not address their telecommunications needs outside of the STS.

[123] Examples include Nokia's 9200 series, Blackberry™, Sidekick™ and Palm PDAs.

6.4 Findings summary

- The changing business use of communications technologies impacts on people with disabilities, because there is a serious lack of awareness among the wider Australian population about the communications ability and needs of people with a disability. Some consumers with disabilities are unable to easily conduct business over the phone or the Internet because of accessibility issues.
- There are a number of telecommunications products that consumers with disabilities can benefit from. However, these consumers have difficulty in finding information about the products, including learning about features of the products that may prevent persons with disabilities from being able to use them.
- The relative importance of the fixed line telephone as a communications device is declining due to increased take up of mobile phones and Internet communications. However, the USO does not guarantee reasonable access on an equitable basis to mobile phones and the Internet in the way it guarantees access to the STS. Some consumers with disabilities need non-standard equipment or software to be able to access mobile phones and the Internet, and must purchase these add-ons at their own expense.
- Most Australians have a wide range of options from which to choose a mobile phone or an Internet connection that meets their needs and budget. The number of options that meet the communication needs of consumers with disabilities is often limited and more expensive. As a result, current mobile and Internet arrangements are not able to meet the needs and requirements of some consumers with disabilities.
- Given that someone with a disability, on average, has a lower income than someone who does not have a disability, the relatively high expense of mobile handsets, broadband connections, software, equipment and aids that meet the communication needs of someone with a disability means that some individuals with disabilities cannot afford to access these products or services. The current disability equipment arrangements do not address this inequity, because they address on the provision of non-standard equipment to consumers who are unable to use standard equipment to access the STS.
- If the scope of the USO were extended in order to guarantee reasonable access to mobile phones and broadband on an equitable basis, this guarantee would apply to all Australians, and not just to those with a disability. Currently, it is not economically feasible to extend the guarantee to include access to mobile phones and broadband to all Australians regardless of where they may live or carry on business.
- Standard products that can be used by consumers with disabilities — such as mobile phones and broadband — are on average more expensive than the standard products that are available on the market. This is because some consumers with disabilities are only able to use more expensive items of equipment.
- Consumers with disabilities are purchasing telecommunications equipment outside the current equipment arrangements. This is a reflection that some of these consumers have communication needs that are not currently catered for by the current disability equipment arrangements — such as Braille displays for computers, and screen reading and voice recognition software.
- Extending the scope of the USO or the current equipment arrangements to apply to equipment and software that facilitates mobile phone or Internet access for someone with a disability is not currently feasible.
- Not all consumers with disabilities — particularly the elderly — are interested in learning how to use new products, such as mobile phones and the Internet, regardless of the cost. They are more comfortable with using the fixed line telephone, and thus access to the STS remains important.

Chapter 7

New and emerging digital technologies

This chapter addresses term of reference b(i). It examines current research into new and emerging digital telecommunications technologies that could provide improved access for people disabilities to telecommunications services, including considerations of equipment connectivity and compatibility issues, the suitability of specialised equipment, such as TTY, to meet the needs of people with disabilities, emerging technologies such as multimedia and VoIP applications, and access to other services including mobile phone and Internet services.

Mobile phones and communications over the Internet have increased the communication options available to all Australians. Some consumers who have a disability are able to use many of these technologies — for example, people who are deaf are able to use SMS, email and web-cameras. Other consumers who have a disability are able to use the standard products with the assistance of additional equipment or software — for example, neck loops or induction plates, voice recognition or speech out-put software, and Braille displays. In addition to these standard products, there are a number of non-standard products that are being tested and that may slowly make their way onto the Australian market. These include speech output mobile phones, digital TTYs and captioned telephones.[124]

There are also likely to be a number of changes to the STS, and to the fixed-line telephone networks, as has been seen in other countries. These changes could include a radio or wireless network, digitising the PSTN, or the convergence of mobile and fixed-line phones. These changes to the existing technology are likely to have a number of implications for telecommunications access for consumers with disabilities, and are discussed below.

7.1 Mobile phones and other handhelds

As discussed earlier, there are a number of mobile phone features that are useful and accessible to some people with disabilities. This trend is expected to continue, particularly in relation to the introduction of 3G mobile handsets. A related trend is the increase in the take-up of handheld devices, which can potentially give people who are hearing or speech impaired mobile access to text-based communication. The introduction of these mobile phones and other handhelds reflects the emergence of multimedia communications. Multimedia platforms allow someone the choice of communicating via text, voice, or video using a single piece of equipment such as a mobile phone, personal digital assistant or computer.

The 3G mobile handsets and the more sophisticated mobile handsets can be used to connect to instant messaging services. Instant messaging is superior to SMS in a number of ways, including:

[124] A captioned telephone is a new telephone technology that allows people to receive word-for-word captions of their telephone conversations. The phone looks and works like any traditional phone, with callers talking and listening to each other, but with the captions displayed on the phone's built-in screen so the user can read the words while listening to the voice of the other party. If the user has difficulty hearing what the caller says, they can read the captions for clarification.

- the sender can see whether their conversant is on-line or not, and therefore, whether they are likely to see the message or not, unlike SMS where the sender receives no confirmation of delivery;
- the transfer of messages is more reliable than SMS, faster than multiple emails, and is very close to real time; and
- it can be used both from a 3G handset or from a computer with an Internet connection.

Another potential benefit of the 3G phones is that handsets that are fitted with cameras can be used to make video calls, and the transfer of data is close to being fast enough for deaf users to be able to converse in Auslan, and for hearing impaired users to be able to lip read. As discussed in Section 6.3 there are a number of reasons why this is not currently possible, including:

- insufficient data transmission speeds — signing must be slowed down or repeated, and lip-reading is made more difficult because the transmission of audio and visual information is not synchronised; and
- the phones must be held or positioned to give the caller as much light as possible so that the visual information can be seen on the other side.

However, stakeholders are generally optimistic that something will become available in the near future.

In the UK, hearing and speech impaired people can use the Nokia 9210 to make text calls to a relay service, providing them with 'away-from-home' access to telephones. While handsets from the Nokia 9200 series are currently available in Australia, it is not as yet possible to use them to place text calls to the NRS. Given that the TTY compact — a smaller, portable TTY that could be used with an analogue mobile phone — is no longer available in Australia, hearing and speech impaired people in Australia do not currently have access to mobile TTYs. This reinforces their reliance on a STS and payphones, as well as on the equipment necessary to access them.

The UK's Royal National Institute of the Deaf website indicates that the Nokia 9210 Communicator is currently the only mobile phone that can be used as a 'text phone' in the UK. The Nokia 9210 can be used to call landline text phones directly, or make calls to hearing people using Relay Assist, provided by the Royal National Institute of the Deaf's Typetalk service. To use the Nokia 9210 as a text phone, a user must buy a handset that comes with the Royal National Institute of the Deaf's mobile text phone software — a package that, in the UK, is currently only available through Vodafone.[125]

[125] Royal National Institute of the Deaf 2006, *Mobile phones — information for deaf and hearing impaired people (fact sheet)*, http://www.rnid.org.uk/information_resources/factsheets/equipment/factsheets_leaflets/?ciid=289399, accessed on 22 May 2006.

A new mobile handset that is currently being trialled in Australia is the Owasys™ phone. This is a handset that is designed specifically for blind and vision impaired users. Rather than a screen, the phone provides speech output through a synthesised voice so that the user can hear the different menu options, whether there is sufficient reception or battery charge, and the content of SMS messages. The phone's buttons are well separated from one another, and users can keep a list of contacts, send text messages and customise settings.

Consultations with stakeholders indicates that potential users are divided between whether or not the Owasys™ handset is preferable to a standard mobile handset that is enhanced with speech output software. One potential user questioned the need for an expensive, non-standard product when a standard handset could be reasonably adapted to provide the same quality of service.

Currently, the trend in mobile phones is towards smaller, thinner handsets, in order to facilitate the portability of the phone. It is anticipated by several stakeholders that this is likely to change as the population ages, because the small handsets necessarily have smaller screens and smaller buttons. This can make navigation difficult for elderly people and people who are mobility or dexterity impaired. A number of handsets are appearing on the market that could potentially address these concerns. For example, Vodafone has released its 'Simply' series — three handsets that are designed to be used by people who find current handsets to be too complicated to navigate or who are unfamiliar with mobile phone technology. One of the Simply handsets incorporates a number pad with buttons that are raised and separated from one another, facilitating its use by people who are vision or dexterity impaired.

7.2 The Internet

The Internet has opened up a number of avenues for communication, many of which can be accessed by someone with a disability. A number of stakeholders noted that since so much published information was duplicated on the Internet, it was much easier for someone who was blind to search for something on-line, using screen-reading software or a Braille display, than it would have been previously. The same point was made in relation to people who were mobility impaired — people who were unable to use their arms or hands were able to use voice-recognition software to communicate via email or to browse the web.

Stakeholders noted that one of the benefits of the Internet for speech and hearing impaired people was that they could use email or instant messaging to communicate with others, without the others knowing that they had a disability. The other potential benefits of the Internet are alternative relay arrangements — Internet relay, video relay, or both. Currently, Australia's NRS only offers TTY and voice relay, but it is anticipated that Internet Relay will be available in Australia by July 2007.[126] Internet Relay operates similarly to TTY relay, except that users contact the relay centre using an Internet connection rather than a TTY. Depending on the type of relay service offered, users contact the relay centre using instant messaging software or a designated web-page. This would also allow users to contact or be contacted by the relay centre using a multimedia handheld device.

[126] Senator the Honourable Helen Coonan 2006, *Media Release: National Relay Service Contract Announced*, http://www.minister.dcita.gov.au/media/media_releases/national_relay_service_contract_announced, accessed on 20 June 2006.

Video relay requires either a videophone or a web camera, and a broadband connection. Currently, video relay is not offered in Australia, however it is available in Sweden, some states in the USA, and is being trialled in the UK. Someone who is deaf contacts the relay centre and is able to sign their part of the conversation to the relay operator. The relay operator then speaks the conversation to the recipient of the call, listens for and then signs back the reply. The benefits of video relay over TTY and even Internet relay are:

- the conversation can flow more naturally, since there is no need to stop and take turns to type;
- the conversation can be conducted in the deaf user's first language (Auslan), whereas text relay requires English;
- facial expressions and body language can be used to convey a tone — something which is harder to do using text relay.

There are, however, some disadvantages associated with both of these alternatives to the current relay arrangements. These include:

- the malicious and criminal misuse of Internet Relay (see Box 7.1);
- the limited number of Auslan interpreters in Australia, and the costs associated with hiring Auslan interpreters to facilitate calls to the relay centre; and
- the potential for video relay to act as a substitute for, or to completely replace, on-site Auslan interpretation — this would depend on the design of relay service. In the USA, Video Remote Interpreting (VRI) calls that are made through the video relay service where the caller and the recipient of the call are in the same location are not permitted.

To some extent, the malicious misuse of Internet Relay can be addressed by requiring users to register a username and password in order to access the service. However, in the USA, this option has met with little support from users, who feel that a requirement of registration is an incursion on their privacy. There is anecdotal evidence that New Zealand's Internet Relay faces some of the same problems in relation to malicious misuse.

Another possibility offered by the Internet is Voice over IP (VoIP). VoIP allows people to make and receive telephone calls by using a broadband connection and a computer equipped with speakers and a microphone, or by using a broadband connection and a telephone similar in appearance and function to a standard handset. Some of the benefits of VoIP for someone with a disability include:

- someone who does not have sufficient dexterity to use a standard handset can place calls using VoIP and a computer with voice-recognition software;
- the number for the VoIP handset can be linked to the handset rather than to an exchange or a house — this means that as long as a broadband connection is available, someone using a VoIP handset can continue to make and receive calls on the same number, which improves mobility options;
- the cost of individual calls — both local and international — is much cheaper because unlike calls made over the PSTN, costs do not depend on the number of exchanges between the person making the call and the person receiving the call; and

- the possibility of Text over IP for users with a hearing disability — a recent OECD paper has suggested that regulators promote the availability of this service in stand-alone VoIP phones and in PC-based software programs that provide VoIP capability.[127]

Box 7.1

INTERNET RELAY — MALICIOUS MISUSE

Traditional Relay connects a TTY or text telephone to a regular telephone. Now, however, Relay is available on the Internet. A computer or text messaging mobile device takes the place of the TTY machine. With Internet Relay, anyone can make a relay call as if they were deaf. In fact, most are not. That's the problem.

Since it began in 2002, Internet Relay has been overwhelmed with calls from overseas criminal gangs using the service to scam U.S. businesses and individuals. Relay operators estimate that at least half — and more likely 75 per cent or more — of all Internet Relay calls are either fraudulent or obscene.

Some hearing kids think it's fun to make relay operators say dirty words. Operators are supposed to read whatever is typed to them, whoever is on the phone. Relay operators who refuse, risk being fired.

Relay is paid for out of a charge on all phone bills for the Telecommunications Relay Service Fund. There is no cost to the person making or receiving a relay call. In the six month period ending May 2005, the Telecommunications Relay Service Fund paid out over $51 million to Internet Relay providers.

There are more Internet Relay calls now than ever — and most are still Nigerian fraud or obscene calls. That will never change until proof of need is required in order to use Internet Relay. No 'technology solution' can take the place of that.

At least one Internet Relay provider says it has installed software to block IP addresses recognized as originating outside the U.S. Relay operators who worked for that provider say that software was quickly thwarted. This is not surprising, as software to hide your IP address is available on the Internet and costs less than $30 to download.

Source: Stop Relay Abuse 2006, *Stop fraud and obscene calls,* http://www.stoprelayabuse.com/, accessed on 26 June 2006.

The reduced cost of individual calls would benefit most consumers, however, they would be particularly beneficial to those consumers on low incomes — a segment in which consumers with disabilities are disproportionately represented. The potential to improve the mobility of the handset and to allow someone to receive calls to the same number regardless of whether they are at home or away is of particular benefit to people with disabilities who learn to use a particular handset and who feel uncomfortable using different phones. However, these benefits depend critically on the availability and the affordability of broadband. If the cost of a broadband connection is high, then it is not possible to benefit from the cheap VoIP calls. Similarly, if broadband is not widely available, then the benefits of the mobility of the handset are limited.

There are a number of other shortcomings in relation to VoIP, including:

- the sound quality of the calls is often inferior to the sound quality of PSTN calls — voices can be heard as muffled or distorted and there is sometimes a lag or an echo, which would make communication using VoIP frustrating for people who are hearing or speech impaired;

[127] Organisation for Economic Co-operation and Development 2006, *Rethinking universal service for the next generation network environment*, DSTI/ICCP/TISP(2005)5/FINAL

- access to VoIP and the speed of the connection will vary according to the number of other users attempting to access the Internet through the same ISP; and
- a power source is necessary for the broadband connection and for the computer or the VoIP handset at all times — either directly or through a battery pack.

While all these advances provide a number of new communication options, it is unlikely that they will become perfect substitutes for telephones. Not everybody owns or wants to use a computer, and for those that do, a computer is relatively expensive and depreciates quickly. In addition, a computer would need to be switched on and connected to the Internet at all times in order for a user to receive calls.

Nevertheless, computers, the Internet, and many of the add-ons are standard equipment that can be used by most people, perhaps with the exception of those who require more expensive add-ons, such as screen reading or voice recognition software. For some people with disabilities, access to Internet related products and programs is limited by considerations of cost rather than the design and functionality of the equipment itself.

Technical Aid to the Disabled Australia

Another issue is the affordability of Internet access itself. Some carriers bundle cheaper or faster Internet connections with a STS, however, as discussed in Chapter 6, consumers with disabilities must consider whether these savings are off-set by an increase in the cost of non-standard equipment hire. Technical Aid to the Disabled Australia offers discounted Internet access to consumers with disabilities and the frail aged.

Technical Aid to the Disabled Australia (TADAust) is a thirty-year-old initiative that began in Sydney with the aim of providing technical aids to people with disabilities. The program initially operated using volunteer tradesmen and engineers. It has subsequently expanded to six fully operational offices around Australia.

TAD offices in each State are funded by the State-based department responsible for disability issues and also through public donations. Currently, TADAust works together with health care professionals to assess the needs of the frail aged and people with disabilities in order to design aids that will improve their quality of life and independence.

One of TADAust's more recent initiatives is the provision of low-cost Internet access to people who are eligible for the Disability Support Pension, the Aged Pension or a Department of Veterans' Affairs Entitlement Card.[128] TADAust Connect — the name of the program — provides dial-up Internet access for a fee of $5.50 a month as an alternative to monthly rates up to $30 required by most dial-up service providers.[129] An estimated 250 000 people are expected to be able to access and benefit from this arrangement.[130] More recently, TADAust has started to offer ADSL broadband at a discounted rate, and a home phone service.

However, because TADAust does not offer handset rental with their fixed line telephone service, it is not obliged to offer telecommunications disability equipment. Customers that are already renting equipment from their current carrier can continue to be billed for it by TADAust, although TADAust note that they 'do not currently participate in any subsidy programs…and therefore are unable to offer a discount at this time'.[131]

7.3 Wireless local loop

The wireless local loop (WLL) is 'a system where fixed radio systems are used instead of copper pairs to provide a connection between a handset (fixed or mobile) and a telecommunications base station or network'.[132] Instead of calls, faxes, emails etc. being sent and received along physical telephone cabling, they are securely transmitted through the airwaves, just like mobile phone calls.[133] WLL is already available in some parts of Australia.

Some stakeholders have concerns about the fact that TTYs are not compatible with the WLL. TTYs can only be directly connected to an analogue line. While TTYs that are fitted with acoustic couplers can be used with a telephone,[134] this is not a practical long-term solution, because:

- the Uniphone™, which is estimated to account for half of all TTYs currently in use, does not have acoustic couplers; and
- using a TTY's acoustic couplers, rather than plugging the TTY directly into the telephone line, can cause 'jumbling'[135] due to the transmission of background noise.

128 TADAust Connect 2006, https://www.tadaustconnect.org.au/Page.php?s=8, accessed on 14 March 2006.

129 MS Society Australia 2006, *Low Cost Internet Services For Australia's Frail Aged, Veterans And People With Disabilities*,

130 Disability Forum 2005, *Low cost Internet services for Australia's frail aged, veterans and people with disabilities*, http://www.disabilityforum.org.au/page.php?id=116, accessed on 14 March 2006.

131 TADAust Connect 2006, *Phone Frequently Asked Questions*, http://tadaustconnect.org.au/phone/faq.html, accessed on 18 August 2006.

132 Australian Mobile Telecommunications Association 2003, *Glossary of Frequently used Terms in Mobile Phone Communications*, http://www.amta.org.au/default.asp?id=140, accessed on 19 May 2006.

133 Telstra 2006, *There's something in the air*, http://www.telstrawholesale.com/products/docs/fixed_voice_cdmawllbrochure.pdf, accessed on 19 May 2006.

134 In order to do so, the telephone handset rests on the acoustic cups, and the TTY's signals are transmitted through tones that are received by the handset.

135 Jumbling occurs when the data transmitted to or from a TTY is incorrectly sent or received, and the output is incomprehensible to the recipient.

As the USP, Telstra will still be obliged to ensure that TTY users continue to have reasonable access to the STS on an equitable basis. In areas that have the WLL, Telstra continues to run a cable from the TTY user's home directly to the telephone exchange. While this provides access to the STS, it is not an ideal solution because the cable runs to a fixed address and if there are movements or changes in addresses, then arrangements for a new cable must be made. This means that not only is the consumer using non-standard equipment, but that their connection to the STS is also non-standard.

Users are concerned that these issues may be overlooked during the roll-out of the WLL, as they were when the analogue mobile network was replaced with the GSM network. Telstra, however, is aware of the problems, and of stakeholder concerns in this area. While no firm alternative to the TTY has been identified, Telstra is continuing to look at options, and is optimistic that it will be able to announce WLL compatibility with TTYs in the near future.

7.4 Fixed-mobile convergence

Fixed-mobile convergence is expected to have a major impact on telecommunications use in Australia and around the world in the next three to five years. Fixed-mobile convergence means that with one handset and with one phone number, users can make and receive calls either on a mobile network or a fixed line network, depending on where they are. This development is largely driven by the fact that consumers are substituting mobile calls for fixed calls, and that fixed-call service providers are seeing a drop in their share of the market for telephone calls. This is based on the relative decline in the importance of the fixed-line, as discussed in Chapter 1.

In May 2006, British Telecom launched what is said to be the world's first combined fixed and mobile phone service as well as a 'fusion' phone that functions as a mobile phone outside of the home and as a cordless fixed-line phone in the home. 'BT Fusion works just like a mobile phone when you are out and about, but switches automatically onto a BT Broadband line when you get home…for the first time customers will be able to get the best of both worlds in one service — combining the convenience and features of a mobile with fixed line prices and quality'.[136]

The advent of fixed-mobile convergence in Australia is likely to result in the present definition of the STS being seen as obsolete. It will also result in a new range of handset options becoming available, some of which may be useful to people with disabilities. This can be expected to create further pressure for change in the current disability equipment arrangements.

[136] CallCentres.net 2006, *BT Launches World's First Combined Fixed and Mobile Phone*, http://www.callcentres.net/CALLCENTRES/LIVE/me.get?site.sectionshow&CALL1509, accessed on 18 May 2006.

7.5 Digital lines

There is a growing trend towards digital telecommunications. While Australia's Public Switched Telecommunications Network (PSTN) is largely an analogue network, there are elements of it that are already digital and some customer premises equipment is also digital. For example, Australia has had an Integrated Services Digital Network (ISDN) available for some time, and has found several applications in business. It is also attractive to consumers in areas that have limited access to broadband. The digitisation of the PSTN is seen as something that is likely to occur within the next ten years.

For some consumers with disabilities, digital communications will pose some issues. For example, Australian TTYs are analogue and therefore incompatible with digital networks. If and when the Australian PSTN becomes fully digital, the current TTYs will need to be replaced with a digital equivalent, or users will need to obtain an analogue to digital converter. In the USA, a digital TTY has recently become available and general-purpose analogue-to-digital converters are available. However the cost of purchasing new digital TTYs will be very small when compared with the other costs involved in changing to an all-digital PSTN.

7.6 Findings summary

- In spite of the new technologies that are becoming available and the decline in the relative importance of the fixed-line service, the household penetration rate of fixed-line services remains high, at 95 per cent. This suggests that, while consumers with disabilities can benefit from a range of new products and services, demand for telecommunications disability equipment through the current arrangements will continue.
- Under the current arrangements, there is no incentive for equipment suppliers — the carriers — to embrace or respond to new technologies that could be of benefit to consumers with disabilities. This is demonstrated through the range of products that are available for sale in other countries, but which are not currently available in Australia through disability equipment programs (for example, compact TTYs, or Owasys™ mobile phones).
- Other useful initiatives that aim to facilitate access to telecommunications for consumers with disabilities include the Independent Living Centres, which display and provide information about different sorts of aids and telecommunications equipment, and Technical Aid to the Disabled Australia, which provides discounted access to the Internet among other things. Both of these initiatives operate on a non-commercial basis, which again suggests that legislative and regulatory measures are necessary to ensure that carriers offer non-standard equipment to consumers with disabilities.
- Moves to change the current STS from an analogue network to a digital or wireless network will have implications for sound and data quality. Some of the products that are available through the current equipment arrangements are not compatible with the changes being considered, and as yet, no long-term solutions have been identified.
- Not all consumers with disabilities are interested in learning how to use new and emerging technologies.
- Another factor that limits the uptake of these new technologies and products is the cost to the consumer. In some cases, the sorts of products that can be used by someone with a disability are more sophisticated or higher-grade versions of standard products. This raises issues of affordability.

Chapter 8

Future demand

This chapter addresses term of reference b(ii). It examines the likely demand over the next 5 to 10 years for access to telecommunications customer premises equipment obtained through disability equipment programs, including emerging areas of need such as the ageing population, Indigenous communities and people living in non urban areas.

Understanding the usage of telecommunications disability equipment within the community provides an insight into the nature of demand both now and into the future. Estimating the current usage of telecommunications disability equipment is an inherently difficult exercise due to data limitations. It requires the drawing together of information from various sources.

The Australian Bureau of Statistics' official estimates of the number of Australians with a disability include:

- the number of Australians with a disability who use communication aids. For this project the data is limited as there is not enough information to separate out communication aids that are unrelated to the STS (such as hearing dogs or cochlear implants); and
- disaggregated data on the main condition that someone with a disability is affected by. For example, the number of people who have or have had cancer and strokes — which may have resulted in that person losing their ability to speak. This is somewhat suboptimal, as the preferred data would be the number of people with the type of disability that means they potentially require telecommunications disability equipment to access the STS. This would include the number of people with a hearing impairment (including people who are deaf), people who have a vision impairment (including people who are blind), people who have a speech impairment (including people who are mute), people who are deafblind, and people who have limited mobility or dexterity.

Carriers can provide information on the number of requests for non-standard equipment that they receive and fulfil each year, however, they are unable to provide any insight into:

- how many of their customers have a disability;
- how many of these customers are able to use standard equipment; or
- how many of these customers use non-standard equipment.

This review also considered alternative sources of information to the official statistics, including data from recently commissioned surveys, the knowledge of suppliers in the market, estimates referred to by disability organisations, and data collected for administrative purposes.

The estimates provided in this chapter, therefore, are drawn from a range of sources. None of the sources used in this chapter present the 'whole picture', however, taken together, they provide a reasonable indication of observed, potential and likely future demand for telecommunications disability equipment.

8.1 Current demand for telecommunications disability equipment

Official disability statistics

The definition of disability used by the Australian Bureau of Statistics[137] (ABS) is shown in Box 8.1.

Box 8.1

DEFINITION OF DISABILIY

Disability is defined as any limitation, restriction or impairment, which has lasted, or is likely to last, for at least six months and restricts everyday activities. The estimate of the number of people with disabilities includes those who may not consider themselves to have a disability — for example, elderly people who perceive their hearing or vision loss as a natural consequence of ageing, and not as a disability. This is because the survey [of Disability, Ageing and Carers] does not use the word 'disability', but seeks to establish disability status through an initial set of seventeen 'screening modules', which look at a range of possible limitations, restrictions, need for assistance, health conditions and so on. The estimate of the number of people with disabilities is a derived variable, obtained from the answers provided to the screening questions.

Source: Discussions with the Australian Bureau of Statistics, and Australian Bureau of Statistics 2004, *Disability, Ageing and Carers: Summary of Findings 2003, Australia,* cat. no. 4330.0, AusInfo, Canberra

The ABS estimated that in 2003, there were around 4 million Australians with a disability — some with more than one — and of these 4 million:

- 206 600 required assistance from a carer in order to communicate; and
- 893 000 used an assistive device or aid for their communication needs.[138]

The three types of communication aids considered by the ABS were:

- hearing aids — including cochlear implants, hearing dogs, light signals (e.g. the visual alerts on telephones), loops and teletypewriters;
- electronic communication aids — including reading or writing aids, speaking aids, mobile or cordless telephones and fax machines; and
- non-electronic communication aids — including reading and writing aids and speaking aids.

The ABS' definition of communication aids do not match the equipment provided through the DEP. However, some of the equipment that is provided through the DEP is included in some of the categories of communication aids considered by the ABS. Based on the ABS' definitions, the categories 'hearing aids' and 'electronic communication aids' are of particular importance, because they encompass the non-standard equipment used to access the STS — such as TTYs, cordless phones and light signals. However, it should be noted that both of these categories also include equipment that is *not* available through the DEP.

In addition to the use of communication aids, some people with disabilities also require formal assistance with communication (see Box 8.2).

[137] ABS data used with permission from the Australian Bureau of Statistics (http://www.abs.gov.au).

[138] Australian Bureau of Statistics 2004, *Disability, Ageing and Carers: Summary of Findings, Australia, 2003,* cat. no. 4430.0, AusInfo, Canberra.

Box 8.2

FORMAL ASSISTANCE WITH COMMUNICATION

The ABS definition of formal assistance is:

'Help provided to persons with one or more disabilities by:

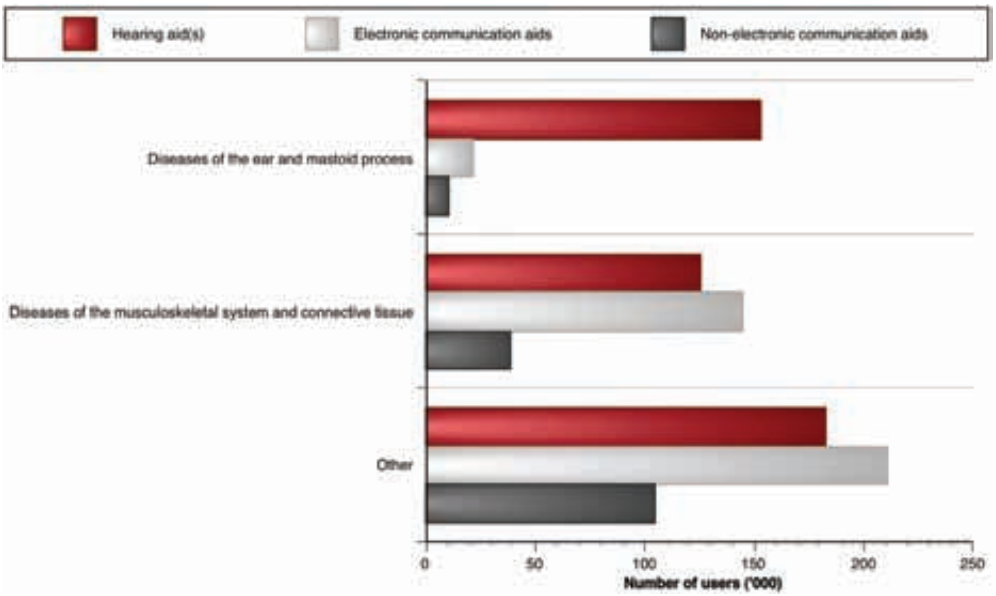
- Organisations or individuals representing organisations (whether for profit or not for profit, government or private); and
- Other persons (excluding family, friends or neighbours as described in informal assistance) who provide assistance on a regular, paid basis and who are not associated with any organisation.'

Source: Australian Bureau of Statistics 2004, *Disability, Ageing and Carers: Summary of Findings 2003, Australia,* cat. no. 4330.0, AusInfo, Canberra

The majority of people with a disability requiring formal assistance with communication (206 600 people) received it (200 600 people), however, it is unclear whether these people receive formal assistance with communication because they do not use a communication aid, or whether they do not use a communication aid because they receive formal assistance with communication. Overwhelmingly, people with diseases of the ear or mastoid process, or of the musculoskeletal system or connective tissue were the ones that were most likely to have used one or more communication aids (see Figure 8.1).

Figure 8.1

COMMUNICATION AID USE BY TYPE OF CONDITION, 2003

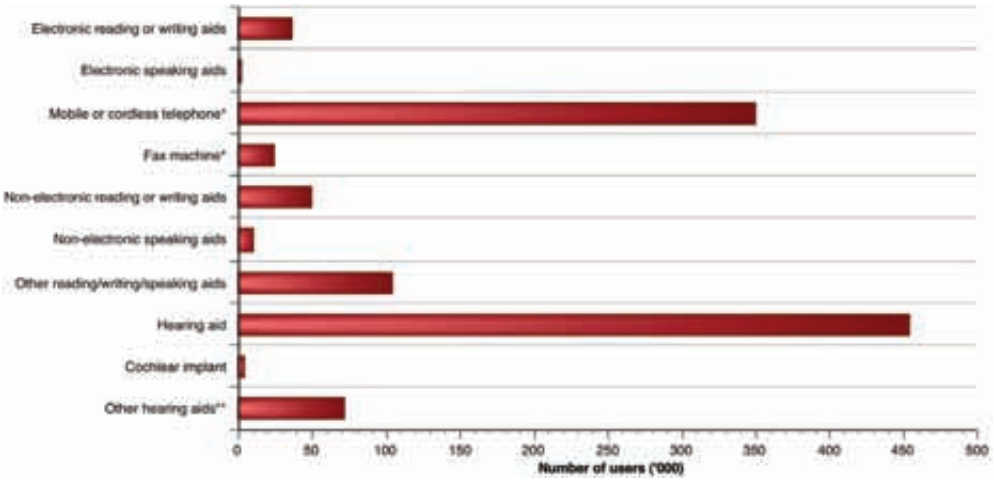


Note: Hearing aids also include cochlear implants, hearing dogs, light signals, loops and teletypewriters. Electronic communication aids include reading or writing aids, speaking aids, mobile or cordless telephones and fax machines.
Source: Australian Bureau of Statistics 2004, *Disability, Ageing and Carers: Summary of Findings 2003, Australia,* cat. no. 4330.0, AusInfo, Canberra

The communication aid that was used by the greatest number of people was the hearing aid (453 700 people), followed by mobile or cordless telephones (349 800 people). 'Other hearing aids' — which includes TTYs — were used by around 72 200 people (see Figure 8.2).

Figure 8.2

COMMUNICATION AID USE BY TYPE OF AID, 2003



Source: Australian Bureau of Statistics 2004, *Disability, Ageing and Carers: Summary of Findings 2003, Australia,* cat. no. 4330.0, AusInfo, Canberra

The official disability statistics provide a good indication of the number of people with disabilities requiring and receiving formal assistance with communication as well as those using communication aids. However, the following factors are relevant when considering these data:

- the definition of communications equipment applied is much broader than the telecommunications disability equipment provided through the current equipment arrangements, because it includes, for example, hearing dogs, fax machines and cochlear implants — this overstates the estimates;
- a number of people reported that they required the assistance of a carer to communicate — this could understate the estimates, because there may be people who require a carer's assistance and therefore choose not to obtain non-standard telecommunications equipment, or rely on their carer because they do not have non-standard telecommunications equipment for whatever reason;
- not all people with a disability will request or require access to specialised equipment or services — this overstates the estimates; and
- usage of specialised telecommunications equipment will be influenced by:
  - the extent to which people with disabilities are aware of the equipment that is available; and
  - the affordability of equipment or software.

Another important factor is the extent to which someone who is unable to use standard equipment is prepared to acknowledge that they require assistance or non-standard equipment. Consultations with Printacall indicated that many of the end-users of telecommunications disability equipment were brought to the shop-front by their family. Many of these people initially refused to test any of the equipment on display because they did not want to admit that they could no longer use the standard handset.

Alternative estimates

The carriers that provide telecommunications disability equipment report annually on the number of non-standard equipment requests they receive and fulfil to the ACMA (discussed further in Chapter 5), however, they do not maintain data on the quantity of equipment currently in use, or the number of users of telecommunications disability equipment.

The best information on the observed demand for and usage of telecommunications disability equipment is derived from the market for TTYs. Through a survey of Australian TTY users, it was recently estimated that there were around 12 800 users of TTYs in Australia in 2004-05.[139] An earlier study, conducted in 2003, provided estimates of the number of TTYs within Australia as ranging from 10 000 to 17 000.[140] The study also quoted Printacall, which estimated that at the end of 2002, there were 13 000 to 15 000 TTYs that had been sold in Australia. This estimate was based on:

- their own sales;
- the provision of rental equipment to customers; and
- an estimate of other sales prior to 1995 when the second Australian supplier of TTYs ceased operations.

8.2 Potential demand for telecommunications disability equipment

Official disability statistics

The disability equipment that is currently available is designed for and targeted at people who are hearing impaired (including those that are deaf), speech impaired (including those that are mute), vision impaired (including those that are blind) or who have limited mobility or dexterity. In order to establish an estimate of the number of people who could potentially be entitled to disability equipment, it is necessary to establish how many people are hearing, speech, vision or mobility impaired.

Official disability statistics, however, categorise people with disabilities by condition, rather than by the extent of their impairment. For example, limited mobility or dexterity could be due to a range of factors, including:

- disease of the nervous system (such as multiple sclerosis or paralysis);
- disease of the circulatory system (such as a stroke);

139 Eureka Strategic Research 2005, *Teletypewriter (TTY) use in Australia*, Canberra, p. 26.

140 Network Strategies 2003, *Review and Analysis of Teletypewriter (TTY) Technology and Use in Australia* , http://www.dcita.gov.au/tel/access_for_people_with_disabilities/reports/summary_of_the_report_on_the_review_and_analysis_of_teletypewriter_(tty)_technology, accessed on 15 May 2006.

- disease of the musculoskeletal system and connective tissue (such as arthritis, back problems); or
- injury, poisoning and other external causes (such as arm/hand/shoulder damage from injury/accident, leg/knee/foot/hip damage from injury/accident).

The need for communication aids stems from various conditions and diseases, and in order to know what the potential demand for equipment is, it is necessary to know the extent to which people who have a particular disability require an assistive device, and *what sort* of assistive device is required. The official disability statistics do not provide enough information to develop meaningful estimates of the number of people who could potentially require telecommunications disability equipment.

Another option is to look at the official health statistics, from the ABS' *National Health Survey 2004-05*. These statistics show the number of people who suffer from a particular long-term condition, however, not all of these long-term conditions match the ABS' definition of disability. For example, the number of people suffering from a long-term disease of the eye or adnexa in 2004-05 was estimated at 10.2 million,[141] — significantly higher than the total number of people reported as having a disability in 2003. Of this 10.2 million, around 5 per cent can be attributed to causes other than long or short sightedness. The number of people estimated to have suffered from a long-term disease of the ear or mastoid in the same period was 2.5 million, while the number of people who suffered from a disease of the musculoskeletal system or connective tissue was estimated to be 6.1 million.[142]

Alternative estimates — hearing impairment

Deafness Forum of Australia

Deafness Forum is the peak body for deafness in Australia, and represents all interests and viewpoints of the Deaf and hearing impaired communities of Australia (including those people who have a chronic disorder of the ear and those who are deafblind). The official statistics indicate that in 2003, 275 900 people had a disease of the ear and mastoid process and that this disability was their *main* health condition,[143] and that in 2005, 2.5 million people in total had a disease of the ear and mastoid, with around 80 per cent of these people having complete or partial deafness.[144]

The Deafness Forum estimates that around 3.3 million Australians over the age of 15 years have a hearing impairment. This is based on a 1998 study by the Centre for Population Studies in Epidemiology, which estimated the prevalence of hearing impairment in the Australian adult population to be 22 per cent.[145]

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141 Australian Bureau of Statistics 2006, *National Health Survey: Summary of Results 2004-05, Australia*, cat. no. 4364.0, AusInfo, Canberra.

142 Australian Bureau of Statistics 2006, op. cit.

143 Australian Bureau of Statistics 2004, *Disability, Ageing and Carers: Summary of Findings, Australia, 2003*, cat. no. 4430.0, AusInfo, Canberra.

144 Australian Bureau of Statistics 2006, op. cit.

145 Deafness Forum of Australia 2006, *Understanding Hearing Loss*, http://www.deafnessforum.org.au/article2understand.htm, accessed on 17 May 2006.

In addition to the estimated 3.3 million Australians that have a hearing impairment, the Deafness Forum quote Trevor Johnston, of the Royal Institute for deaf and Blind Children, who estimated that there are between 15 000 and 20 000 people in Australia who communicate in Auslan, of which 6500 are deaf. The Australian Association of the Deaf also quotes this estimate, but provide an alternative estimate from a 1991 study by Griffith University which estimated that there were 30 400 Auslan users, of which 15 400 were deaf.[146]

Blue Mountains Hearing Study

The Blue Mountains Hearing Study (BMHS) is:

> a population-based survey of age-related hearing loss in an older Australian community. It was conducted during 1997-99…[in] the Blue Mountains region, including the suburbs of Katoomba, Leura, Wentworth Falls and Medlow Bath…because this area has a relatively stable, older population, is fairly representative of the Australian population of this age, and could be targeted readily for publicity.[147]

The prevalence of hearing loss[148] among the BMHS participants (who were aged 50 years or older) was around 39 per cent. Information provided by the Deafness Forum of Australia, based on classifications and effects provided by the National Acoustics Laboratories, suggests that someone with a hearing loss of 21 to 40dB would have trouble understanding soft speech or speech in a noisy environment, and may sometimes use a hearing aid.

The results of the BMHS study, disaggregated by age group, is shown in Table 8.1, compared with results from a similar study in the USA conducted by the US Epidemiology of Hearing Loss Study (EHLS). If the prevalence of hearing loss exhibited in the BMHS were applicable across the Australian population, then in 1998, an estimated 2.3 million Australians over the age of 48 would have had a hearing impairment.

Table 8.1

HEARING LOSS PREVALANCE FOR HEARING LOSS GREATER THAN 25DB, 1998

Age groups	BMHS (%)	EHLS (%)	No. of Australians*
48-59 years	20.5	20.6	524 987
60-69 years	38.5	43.8	550 149
70-79 years	66.6	66.0	725 229
80+ years	88.5	90.0	458 251
TOTAL > 48 years	53.1	45.9	2 258 616

Source: P. Mitchell 2002, *The Prevalence, Risk Factors and impacts of Hearing Impairment in an Older Australian Community: the Blue Mountains hearing Study*, at the 2002 Libby Harricks Memorial Oration on 19 March 2002, and Australian Bureau of Statistics 2005, *Population by Age and Sex, Australian States and Territories,* cat. no. 3201.0, AusInfo, Canberra
* Estimated using Australian population statistics.

146 Hyde, M., & Power, D 1991, *The use of Australian Sign Language by deaf people*, (Research Report No. 1). Nathan: Griffith University , Faculty of Education, Centre for deafness Studies and Research, referred to by the Australian Association of the Deaf, http://www.aad.org.au/info/deafcomm.php, accessed on 17 May 2006.

147 P. Mitchell 2002, 'The Prevalence, Risk Factors and impacts of Hearing Impairment in an Older Australian Community: the Blue Mountains hearing Study', at the 2002 Libby Harricks Memorial Oration on 19 March 2002.

148 Hearing loss was defined as the inability to hear sounds below 25dB, or greater than 25dBHL.

It should be noted that people with a hearing impairment of the magnitude shown in Table 8.1 may not necessarily require disability telecommunications equipment. A hearing loss of 21-40dB is considered a mild hearing loss, and that people with this severity of hearing loss would have difficulty understanding soft speech or normal speech in a noisy environment, and that some of them might use hearing aids some of the time.[149]

Alternative estimates — vision impairment

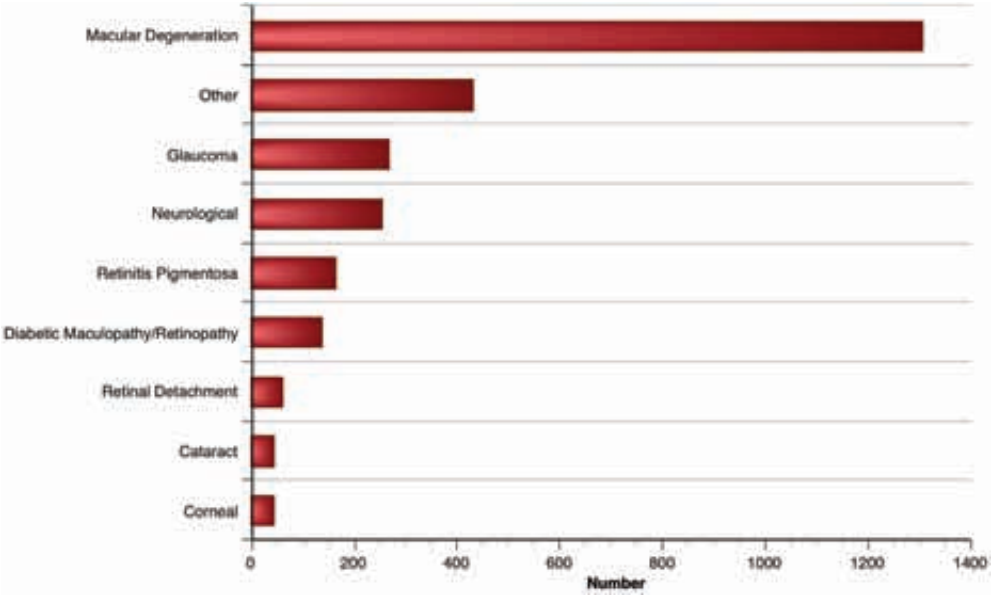
The Royal Society for the Blind of South Australia

The Royal Blind Society of South Australia has strong connections with practicing Ophthalmologists in South Australia, and therefore has an up-to-date database of the number of people in the state who are legally blind, and what type of vision impairment they have. Overwhelmingly, the majority of legally blind South Australians suffered from macular degeneration (48 per cent), followed by vision impairment brought on by glaucoma (10 per cent) and then neurological vision impairment (9 per cent), as shown in Figure 8.3.

In total, there are 2720 people in South Australia who are legally blind, which accounts for 0.18 per cent of the South Australian population. Applying this proportion across the Australian population implies that the number of legally blind Australians is in the order of 35 655. Anecdotally, however, Blind Citizens Australia estimate that the number of legally blind Australians may be just under twice that amount, ranging from 50 000 to 65 000.

Figure 8.3

NUMBER OF PEOPLE WITH LEGAL BLINDNESS BY TYPE OF VISION IMPAIRMENT IN SOUTH AUSTRALIA, 2006



Source: Data provided by the Royal Society for the Blind of South Australia

[149] National Acoustics Laboratories, *Effects of Hearing Loss and Possible Design Solutions*, Canberra.

Centre for Eye Research Australia

A 2004 study conducted for the Centre for Eye Research Australia estimated that:

- over 480 000 Australians are visually impaired in both eyes (visual acuity less than 6/12) and over 50 000 of these people are blind (visual acuity less than 6/60 or visual field less than 10º diameter); and
- nearly 300 000 Australians have visual impairment because of under-corrected refractive error. However, 180 000 Australians have visual impairment due to other causes, which cannot be corrected by spectacles.[150] In the absence of accessible standard products, this will increase the demand for disability telecommunications equipment.

Differences in estimates

There is clearly some disparity between the estimates shown. The variance can be attributed to differences in the years in which the data were collected, and differences in the definitions impairment or disability used in each of the studies. While some disabilities are defined with appropriate tests (e.g. legal blindness) others are not.

Further, the need for access to specialised telecommunications equipment can occur in individuals whose abilities are impaired but not to the extent that they meet a particular test (e.g. again, sight impaired but not necessarily legally blind). Some survey data has been based on self-diagnosis of disability, and because different individuals may assess their condition by different standards, such data is unreliable. In summary, the ranges shown in the preceding sections indicate that potential demand could be made up of:

- around 35 655 people who are blind (including people who are deafblind);
- 480 000 to 518 700 people who are vision impaired (including people who are blind or deafblind);
- 15 000 to 20 000 people who are deaf; and
- 2.5 million to 3.3 million who are hearing impaired (including those who are deaf or deafblind).

8.3 Likely future demand

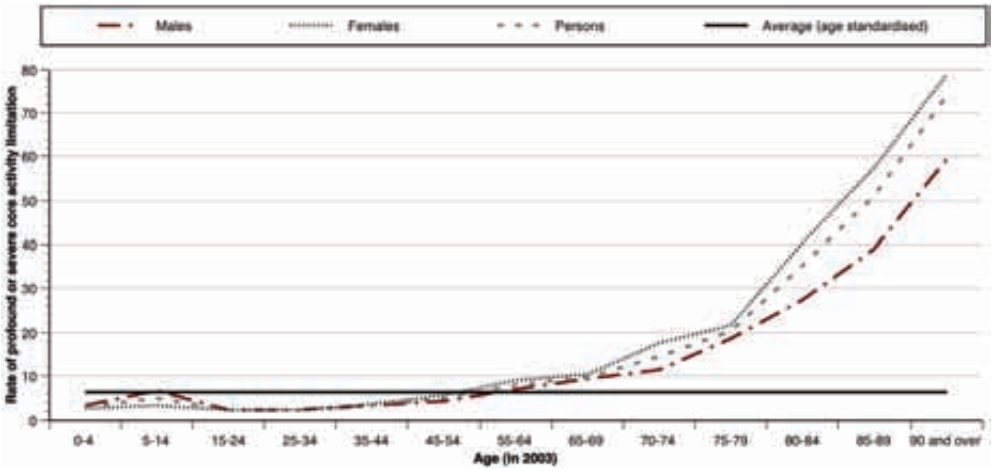
The ageing population

The inability to communicate without assistance is considered to be a 'core activity limitation', along with mobility and self-care. In 2003, 6.3 per cent of Australians with disabilities had a condition that profoundly or severely limited their ability to perform one of these core activities. The incidence of disability — particularly with respect to limiting one of these three core activities — increases with age, as shown in Figure 8.4.

[150] Access Economics 2004, *The Economic Impact and Cost of Vision Loss in Australia*, Canberra, p. 5.

Figure 8.4

PROFOUND OR SEVERE CORE-ACTIVITY LIMITATION RATES, 2003

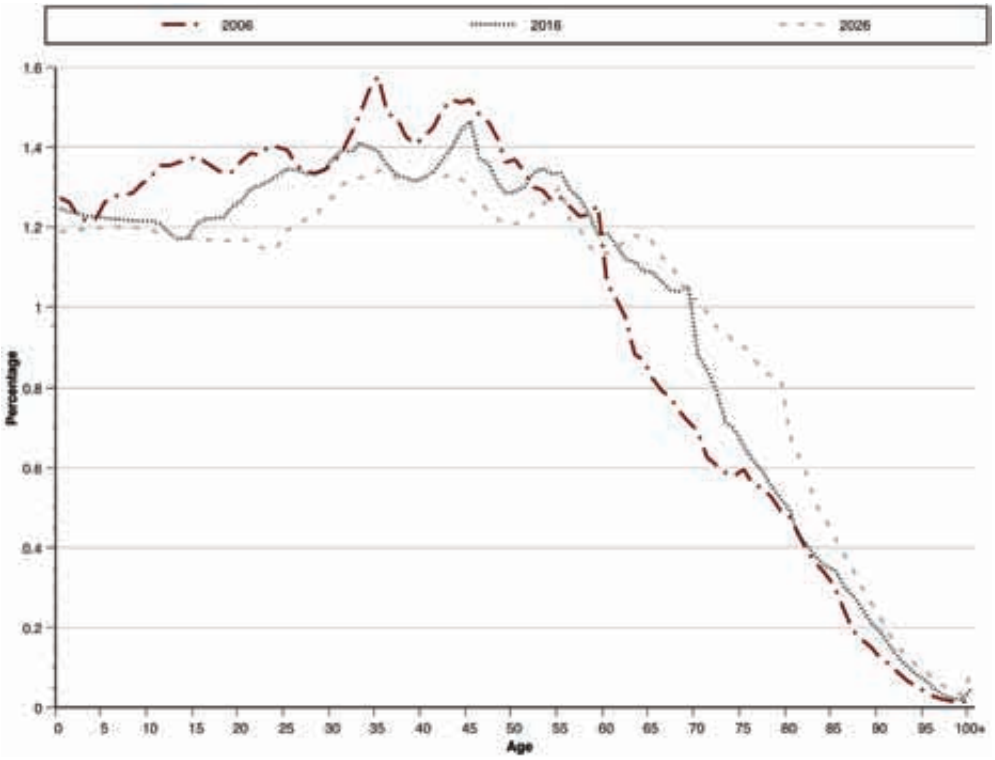


Source: Australian Bureau of Statistics 2004, *Disability, Ageing and Carers: Summary of Findings 2003, Australia,* cat. no. 4330.0, AusInfo, Canberra

Subsequently, it is reasonable to expect that demand for telecommunications disability equipment will increase over time, given that the number of older Australians, as a proportion of the total population, is expected to increase (see Figure 8.5).

Figure 8.5

CHANGES IN THE COMPOSITION OF THE AGE OF THE POPULATION, 2006 - 2026



Source: Australian Bureau of Statistics 2004, *Population Projects, Australia,* cat. no. 3222.0, AusInfo, Canberra

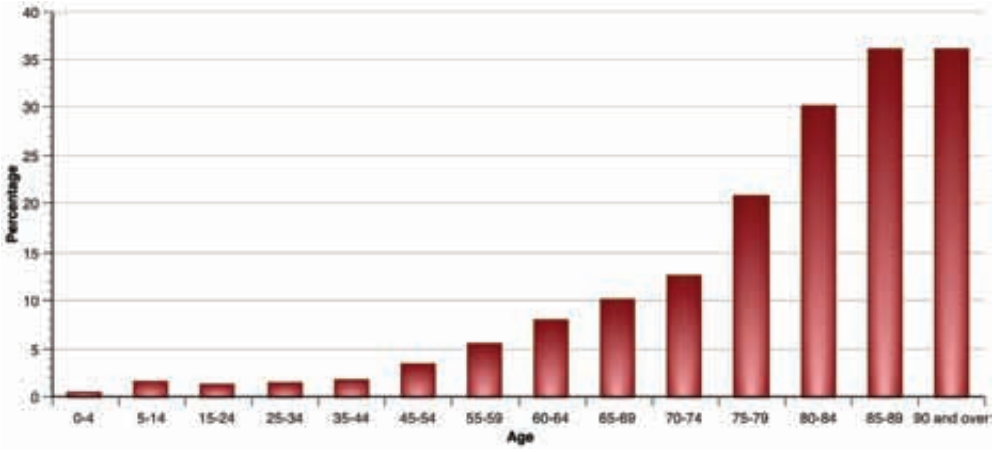
Assuming that the number of people who use disability telecommunications equipment as a proportion of the number of people who use a communication aid remains constant over time, it is possible to estimate the likely increase in demand for disability telecommunications equipment attributable to the ageing of the population. This can be done by estimating the likely increase in the number of people who use a communication aid. In order to do so, it is necessary to know the usage by age — that is, the percentage of people within a given age bracket who used a communication aid in 2003, as shown in Figure 8.6 — and to assume that these percentages also remain constant over time. As can be seen, as people age, the likelihood that they use a communication aid increases.

This pattern of usage by age is applied to projections of future population. Given the ageing population, growth in the number of communication aid users will be greater than growth in the total population. The percentage of people who are expected to use a communication aid, and the percentage of people with a disability both increase as a share of the total population.

Between 2003 and 2016, the Australian population is expected to grow from 19.9 million to 23.4 million people — an increase of 15 per cent. The number of people using a communication aid is estimated to increase from 892 900 people to 1.2 million — an increase of 27 per cent (see Table 8.2).

Figure 8.6

PERCENTAGE OF POPULATION USING A COMMUNICATION AID, 2003



Confidentialised Unit Record File Data sourced from: Australian Bureau of Statistics 2004, *Disability, Ageing and Carers: Summary of Findings 2003, Australia,* cat. no. 4330.0, AusInfo, Canberra

Once again, assuming that the number of people who use disability telecommunications equipment is a fixed proportion of the number of people who use a communications aid, it is likely that growth in the demand for disability telecommunications equipment will increase by around 27 per cent between now and 2016. As noted, this estimate also depends on the assumption that the proportion of people within a particular age-group who use a communication aid also remains constant over time.

For a number of reasons, this assumption is not realistic, because advances in technology may mean that standard equipment is accessible to a number of people who relied on a communication aid in 2003. One example of this is the fact that the standard handset provided by Telstra and Optus now incorporates a volume control. Another, anecdotal example is of some deaf people who no longer use a TTY because they are able to use the Short Message Service (SMS) on mobile phones, and email or instant messaging on computers to meet their communication needs.

Table 8.2

POPULATION PROJECTIONS BETWEEN 2003 AND 2016

	2003 (millions)	2016 (millions)	% Growth
User of communication aid	0.9	1.2	26.7
Has a disability but does not use a communication aid	3.1	3.9	21.6
Does not have a disability	15.9	18.3	12.9
TOTAL	**19.9**	**23.4**	**15.1**

Confidentialised Unit Record File Data sourced from: Australian Bureau of Statistics 2004, *Disability, Ageing and Carers: Summary of Findings 2003, Australia,* cat. no. 4330.0, AusInfo, Canberra, and Australian Bureau of Statistics 2004, *Population Projects, Australia,* cat. no. 3222.0, AusInfo, Canberra

People living in non-urban areas

In August 2005, the Australian Government announced 'Connect Australia' — a $1.1 billion initiative aimed at improving telecommunications access in regional, rural and remote areas. Connect Australia will target broadband, mobile coverage and telecommunications access in Indigenous communities. Of the $1.1 billion allocated:

- $878 million will be spent on rolling out affordable broadband to people living in regional, rural and remote areas;
- $113 million will be spent on rolling out new broadband networks for innovative applications to improve the delivery of essential services;
- $30 million will be spent on extending terrestrial mobile coverage to areas where they can be commercially maintained, and to subsidise satellite handsets in other areas; and
- $90 million will be spent on delivering a comprehensive package addressing phones, Internet and videoconferencing in remote Indigenous communities, and improving Indigenous radio and television.[151]

[151] Australian Government Department of Communications, Information Technology and the Arts 2006, *Connect Australia Fact Sheet,* http://www.dcita.gov.au/__data/assets/pdf_file/30296/FACT_SHEET_Connect_Australia.pdf, accessed on 22 June 2006.

Compared to people living in metropolitan areas, people who live in non-urban areas may have fewer communication options available to them — for example, limited or unreliable mobile phone coverage, limited access to broadband or fewer payphones — or they may have the same number of communication options available to them, but at a higher cost. Connection, installation, maintenance and repair related issues also tend to take longer to address in non-urban areas compared to metropolitan areas. Some people with disabilities are already limited in relation to the sorts of communication options they have available to them, and if they reside in non-urban areas, then their options are likely to be even more limited.

As discussed earlier, there is little publicly information available about the number of Australians who use disability telecommunications equipment, and as a result, it is difficult to estimate how many of these people also live in non-urban areas. The ABS estimated that in 2003, 37.4 per cent of Australians over the age of 15 who had a disability reported that they lived outside of the major cities, compared to 33.3 per cent of Australians over the age of 15 overall.[152] A recent survey of TTY users reported that 23 per cent of respondents indicated that they lived in a rural or remote location, while 71 per cent of respondents indicated that they lived in a capital city or another metropolitan area.[153]

It is unlikely that the introduction of new, upgraded or more affordable technologies to non-urban areas will result in a decline in demand for disability telecommunications equipment. This is based on the observation in Chapter 1 that while fixed lines services have fallen as a proportion of total services (such as fixed line, mobile and Internet), the number of fixed lines has remained relatively constant over the last five years.

It is therefore likely that the average person with a disability, who lives in a non-urban area, will use disability telecommunications equipment less often because they use their fixed line less often. However, they will still require a fixed line, and disability telecommunications equipment to facilitate their access to the fixed line in the same way as people with disabilities who live in urban or metropolitan areas. As a result, it is unlikely that demand for disability telecommunications equipment will change differently to the way it changes in urban areas.

Indigenous communities

One unique sector of the non-urban population is remote Indigenous communities. In Australia, the incidence of disability among Indigenous Australians is greater than the incidence of disability across Australia more generally (see Box 8.3). Ear infections, which can lead to hearing loss if untreated, are prevalent in Indigenous communities. Otitis media — a viral or bacterial infection or inflammation of the middle ear — in Indigenous children is:

> characterised by very early onset, persistence and high rates of severe disease — resulting in chronic disease which Indigenous people carry from childhood into adolescence…otitis media in non-Indigenous children typically resolves with age and is rarely seen amongst non-indigenous children over the age of eight.[154]

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152 Australian Bureau of Statistics 2004, *Disability, Ageing and Carers: Summary of Findings, Australia, 2003*, cat. no. 4430.0, AusInfo, Canberra.

153 Eureka Strategic Research 2005, *Teletypewriter (TTY) use in Australia*, Canberra, p. 26.

154 Steering Committee for the Review of Government Service Provision 2005, *Overcoming Indigenous disadvantage: key indicators 2005*, Productivity Commission, Canberra, p. 5.14.

As a result, Indigenous children tend to suffer from hearing loss, which is often not fully recovered by adulthood.

Box 8.3

RATES OF DISABILITY AND/OR CORE ACTIVITY RESTRICTION, 2002

- The proportion of the Indigenous population 15 years and over, reporting a disability or long-term health condition was 37 per cent (102 900 people). The proportions were similar in remote and non-remote areas. This measure of disability does not specifically include people with a psychological disability.
- The proportion of the Indigenous population aged 18 years and over in non-remote areas reporting a disability (including psychological) was 49 per cent, one-third of whom (17 per cent) had a core activity limitation.
- After adjusting for age differences, Indigenous people over 18 years in non-remote areas were 1.7 times more likely than non-Indigenous people to report a disability resulting in a core activity limitation.
- Reported disability rates need to be interpreted with caution. In particular, rates among Indigenous Australians maybe underreported:
  - Definitions of 'disability' and/or 'long-term health condition' used by non-Indigenous health professionals might not necessarily be the same as definitions used by Indigenous people.
  - The social stigma associated with being labelled 'disabled', especially among Indigenous people with visible physical impairments, can make individuals feel ashamed and embarrassed about their appearance, to the point of avoiding others.
  - Research has shown that a person's perception of their own disability is dependent on their knowledge of available aids and services. This may have substantial impact on reporting rates of disability, particularly when the methodology depends on self-reporting.

Source: Steering Committee for the Review of Government Service Provision 2005, *Overcoming Indigenous disadvantage: key indicators 2005,* Productivity Commission, Canberra, p. 3.6-7.

In 2002, around 57 per cent of Indigenous persons over the age of fifteen living in a remote area reported that they did not have a working telephone in their home, compared to 18 per cent of Indigenous people over the age of fifteen living in a non-remote area.[155] This is not to say that Indigenous people living in remote areas have no access to a telephone — many remote communities rely on 'community phones'. Community phones are a shared telephone service — standard telephone handsets inside a robust casing placed in a location where there is 24-hour access. The regular arrangements for fixed-line telephone services were found to be unsuitable and unsustainable in remote Indigenous communities for a number of reasons (see Box 8.4).

The Connect Australia initiative described above allocated $90 million specifically for improving the delivery of telecommunications services to remote Indigenous communities. Prior to this initiative, the Australian Government launched the Telecommunications Action Plan for Remote Indigenous Communities (TAPRIC) in May 2002, with a funding allocation of $8.3 million over four years. The aim of TAPRIC was to improve telecommunications services in remote Indigenous communities, which it intended to achieve by:

- improving and sustaining the take-up and use of telephone services;

[155] Australian Bureau of Statistics 2004, *National Aboriginal and Torres Strait Islander Social Survey, Australia, 2002,* cat. no. 4714.0, AusInfo, Canberra, p. 49.

- improving the take-up and effective use of Internet services;
- improving the viability and provision of broadband services for community service delivery and community development; and
- increasing the awareness of telecommunications opportunities and rights.[156]

One of TAPRIC's major initiatives is the roll-out of community phones.

The provision of community phones aims to overcome some of these issues, while providing individuals in remote Indigenous communities with access to the STS. It does so in the following ways:

- providing a robust steel case for the standard handset, to protect it from damage;
- introducing a new Telstra prepaid calling card, to eliminate the risk of coins or phone cards becoming jammed in the slot, and to ensure that the cost of the call is prepaid; and
- consulting with the community with regards to where they would like the phones to be located.

During 2005-06, TAPRIC installed 216 community phones in the Northern Territory and Western Australia.[157]

[156] Australian Government Department of Communications, Information Technology and the Arts 2006, *Indigenous telecommunications*, http://www.dcita.gov.au/tel/indigenous_telecommunications, accessed on 23 June 2006.

[157] Australian Government Department of Communications, Information Technology and the Arts 2006, *DCITA — TAPRIC Programs*, http://www.dcita.gov.au/tel/indigenous_telecommunications/tapric_programs, accessed on 23 June 2006.

Box 8.4

FIXED LINE TELEPHONE SERVICES IN REMOTE INDIGENOUS COMMUNITIES — ISSUES

Reliable and affordable voice telephone services are the highest priority telecommunications need for remote Indigenous communities. In their submission to the study [referenced below], Telstra estimated that five in ten persons in Australia have a STS, while only one in ten people in Indigenous communities subscribe to a fixed service. The low take-up among remote Indigenous communities has been attributed to:

- lack of awareness;
- lack of affordability of service connection and usage; and
- the unsuitability of current service offerings for the special circumstances of Indigenous communities.

The lack of awareness is related to the procedures necessary to apply for a phone, the costs associated with connecting and using a phone and their rights as defined by regulatory safeguards such as the USO and the CSG.

As regards affordability, people in remote Indigenous communities generally have very low disposable income, were reluctant to bear the cost a fixed line service, and relied on public phones for their voice telephony needs. In addition to connection costs, remote Indigenous communities would also need to consider the costs associated with extending the network, and trenching costs.

The current service offerings are unsuitable for the remote Indigenous communities, because of:

- remoteness from service support;
- a communal lifestyle; and
- the specific communication needs of each community.

The communal use of a phone causes difficulties for the account holder when family or community members use the phone but are unwilling or unable to contribute to the phone bill. As a result, the account holder has to pay the full amount and often end up disconnecting the service.

Aside from private fixed lines, access to the STS is limited to payphones or phones in community organisations. While there is a high demand for payphones, they are functionally limited, because they cannot receive calls, they are more expensive (per call) than a STS, they are expensive to install and maintain, phone cards or coins can jam in the slot, and they are vulnerable to vandalism. Phones that are accessed through a community organisation are limited because most people can only access them — both to make and receive calls — during business hours. Non-local call rates are more expensive during the day.

Source: The Australian Government Department of Communications, Information Technology and the Arts 2002, *Report on the Strategic Study for Improving Telecommunications in Remote Indigenous Communities,* Canberra.

Given that individuals in remote Indigenous communities generally have limited access to a STS, it is no surprise that individuals with a disability also have limited access to a STS. It is likely that once people living in remote Indigenous communities are able to access a STS, and that the take-up is more widespread, people with disabilities will want arrangements made so that they, too, can access a STS on the same basis as others in the community. It is therefore anticipated that demand for disability telecommunications equipment in remote Indigenous communities will increase significantly.

8.4 Findings summary

- Drawing together the available information, the total number of people who are using communication aids is less than 22 per cent of the number of people with a disability. This reflects the fact that some consumers with a disability can use standard equipment, some consumers with a disability choose not to or are unable to obtain non-standard equipment, and the remainder are unaware of the current equipment arrangements.
- It is difficult to estimate the number of users of telecommunications disability equipment. The one item for which there is some data — the TTY — is also one of the least frequently requested items of equipment under the current equipment arrangements.
- As the population ages, the proportion of the total population that potentially require telecommunications disability equipment will increase. In the next ten years, the population over 60 years of age will increase from 18.1 per cent of the total population to 22.1 per cent. This will result in some increase in demand for equipment through disability equipment arrangements. This increase may be off-set by improved functionality in standard products.
- As discussed in the earlier chapter, in spite of the new and emerging forms of communication that have become available in recent years, demand for a fixed-line service has remained relatively stable, and as a result, demand for telecommunications disability equipment is expected to continue.
- The demand for subsidised telecommunications equipment by Indigenous people with disabilities is likely to rise because of the growing availability of telecommunications in remote Indigenous communities coupled with the higher than average incidence of hearing and vision impairment in those communities.

Chapter 9

Cost of existing carrier disability equipment programs

This chapter addresses term of reference c(i). It presents an assessment of the estimated annual and per capita cost of delivering the disability equipment service to consumers under the current regulatory and self-regulatory arrangements, as well as the proposed alternatives.

The costs associated with the provision of disability telecommunications equipment arise due to a range of factors. These include:

- the cost of purchasing or hiring the equipment itself;
- promotion and information dissemination;
- administration (determining eligibility, evaluating the sort of equipment to offer, consultative arrangements, staff training, maintaining an enquiry line, reporting requirements under the *DDA* and the *Telecommunications Act 1998*, etc); and
- delivery and installation of equipment maintenance, repair and replacement.

9.1 Costs to carriers under the current equipment arrangements

The carriers consulted for this review indicated that the costs associated with the activities described above could not be separated between those that were attributable to the provision of disability telecommunications equipment, and those that were associated with their other operations. The carriers that were consulted are able to estimate some of these costs, however, this information is confidential. This report is therefore unable to provide estimates of the annual costs of delivering their disability equipment services.

The cost for some telecommunications disability items of equipment varies widely. For example, the difference in the cost of providing a Braille TTY compared to a big button phone is considerable. The costs associated with installing the equipment and training the customer about its use are also different for these two examples. As a result, the per capita cost of delivering the disability equipment service to consumers under the current arrangements is also not a meaningful statistic. Based on discussions with some of the larger carriers, and information from other sources, it is estimated that the cost to the carrier, associated with an average item of non-standard equipment, is around $80. At $80 per item of equipment, for the 18 000 items of equipment supplied in 2003-04, the costs of provision would be around $1.5 million for that year across all carriers.

Under the current arrangements, there are a number of factors that will affect these costs. These include demand for telecommunications disability equipment — which is expected to increase over time, as discussed in the previous chapter — and changes to the accessibility of standard products. For example, incorporating an accessible volume control to the standard telephone handset has reduced demand for the volume control phone from Telstra's DEP.

Improving the accessibility and functionality of standard products draws on universal design principles, where products are designed so that they can be used by as many people as possible, regardless of age, ability or situation. Obviously, there is a limit to the extent to which these principles can be practically and cost-effectively adopted. Nevertheless, the improvements to the standard handset are a reflection of universal design principles. The same is true of Telstra's development of the big button phone (see Box 9.1). In response to the needs identified through its consultative process, Telstra introduced a new addition to the equipment list that had been specifically developed to meet as many of these needs as possible.

The needs of some people with disabilities conflict with the needs of others with a different disability. Someone who is blind, for example, can use a standard handset, but would have difficulty using the big button phone because the keys are too large for them to navigate single-handedly. Evidently, there is no 'one size fits all' solution to these accessibility issues. So far, universal design principles have been adopted where it is practical to do so — in the case of some of the add-ons to the big button phone that have been designed for people with limited mobility — or where the potential market is relatively large — in the case of the accessible volume control that is now part of the standard handset and the big button phone.

The size of the market is also an issue that carriers take into consideration when deciding what equipment to offer, and how to display it. Due to the small size of the market, most carrier shopfronts do not have disability equipment on display. Also due to the small size of the market, carrier shopfront staff are often unable to answer queries in relation to disability equipment, because the majority of their time is spent on other products and services. It has also been suggested that even in cases where people are willing to purchase their own equipment — for example, in relation to mobile phones or computer software — they are unable to find the assistance they need from sales staff, because the sales staff do not have a good understanding of their needs. As a result, people who are unable to use standard equipment are marginalised.

As universal design principles become more widely adopted, and the functionality of standard products improves, the demand and the potential market for non-standard equipment is likely to fall. There is a risk that people who remain unable to use standard equipment — even as the standard equipment becomes more accessible — may become more marginalised over time.

Box 9.1

THE TELSTRA BIG BUTTON PHONE

Members of Telstra's Disability Equipment Program Consumer Advisory Group — the consultative forum established to advise Telstra on the user requirements of people with disabilities — had for many years requested that Telstra make a big button phone available through its DEP. There was no equivalent readily available in Australia, and efforts to purchase and adapt big button phones that were available in other countries — in particular, the big button phone provided by British Telecom (BT) — were unsuccessful.

Telstra subsequently put the supply of big button phones out to tender, however, none of the offers for supplying the phones met Telstra's expectations. Following this, Telstra partnered with Trillium Communications to develop a big button phone for the DEP. The phone was designed using considerable input from the Consumer Advisory Group, and incorporated universal design principles. The features that the phone was to incorporate were:

- for people with vision impairment;
  - large easy see and distinguish dial and function keys;
  - large easy to read key designations and user guide;
  - contrasting key colours and designations; and
  - large switches with contrasting activators;
- for people with hearing impairment;
  - high adjustable receiver volume;
  - hearing aid compatibility;
  - automatic gain control and low frequency boost to enhance audibility;
  - adjustable loud ringer with selectable pitch which incorporates low fundamental frequencies; and
  - ring flasher, easily visible from all angles.
- for people with speech impairment, 'voice mode', which allows the sensitivity of the microphone volume to be adjusted, so even the faintest voice can be heard by the other end;
- for people with physical disability;
  - large easy to activate buttons and switches;
  - hands-free mode to allow calls to be made without lifting the handset;
  - auxiliary input to allow the phone to be activated by a separate puffer/lever/'jelly-bean'[158] switch or similar device;
  - 'hot dial' operation;
  - 'hot key' dialling and answer;
  - light, easy to grasp handset; and
  - headset mode, if required.

Source: Consultations with Telstra Disability Services.

9.2 Disability Equipment Program alternatives

In a number of focus groups, participants proposed that the most effective way to convey information about communications equipment suitable for people with disabilities, and to ensure that the equipment met the needs of consumers with disabilities, was to have a sole supplier of equipment, and to separate the provision of the equipment from the provision of the service. The three possible options for a sole supplier include:

[158] A 'jelly-bean' switch is an enlarged, brightly coloured button used as an assistive device for people who are dexterity impaired.

- supply of equipment by a contracted supplier, perhaps through a voucher scheme;
- direct funding of the supplier through contributions from industry; or
- fully government funded and government administered shop-fronts.

This would have a number of implications for all stakeholders — consumers, suppliers and regulators — which are discussed below.

Market power

It was thought that a single supplier of telecommunications disability equipment would have a better bargaining position with manufacturers and importers of telecommunications disability equipment, since the single supplier would be responsible for a much larger market. However, Telstra already supplies telecommunications disability equipment not only to its own customers, but also to the customers of all of the other carriers that have wholesale arrangements with Telstra. It is unlikely that a one-stop shop would have a 'share of the disability equipment market' that is significantly greater than the share of the market that Telstra currently has.

Additionally, stakeholders note that not only is the market for telecommunications disability equipment in Australia small, but that by global standards, the market for telecommunications equipment itself in Australia is small. Carriers and other suppliers are therefore limited in their choice of equipment that meets the needs of Australian consumers while also meeting the standards of Australian regulators. The supply of telecommunications disability equipment, which is believed to be a relatively small share of this overall market, is vulnerable to changes in manufacture or support decisions in other countries.

Carriers advise that, due to Australia's relatively small volumes of non-standard disability telecommunications equipment, international vendors are reluctant to cater for Australia's regulatory requirements for network operation and safety, which differ from international standards. A particular telecommunications product solution that is adopted in Australia is not always guaranteed ongoing support and production from the overseas supplier.

Greater choice between carriers

One of the stated benefits of having a single supplier who provides the equipment directly to the public is that, by separating equipment provision from service provision, consumers can obtain the equipment that they needed, and then select the carrier of their choice for their telecommunication needs. This would therefore give them greater choice among carriers. However, implementation of such an arrangement would require changes to the current arrangements. This is because at present, it is only carriers who offer a standard handset with their STS who are required to offer telecommunications disability equipment to their customers on the same basis. If a sole supplier were to offer equipment to consumers, it is unclear what the obligations of a carrier that hires standard equipment might be.

Funding and administration

Having a sole supplier, or a set of shop fronts under a single brand, raises questions of who will pay for it and who will operate it. The spirit of the *DDA* is that the costs should be borne by carriers, who will pass these costs on to their customers. Under a voucher scheme, the carriers would provide the customer with a voucher of up to a certain value, determined on the basis of the customer's equipment needs. Any purchase with a value over and above the amount of the voucher would have to be met by the customer, but it would give the customer more flexibility as to what sort of product best suited their needs and budget. Another funding option is to require contributions from carriers, in the same way the NRS is funded, or to directly fund the one-stop shop by the government. Effectively, the choice is between whether the costs are borne by taxpayers, or by customers of the major carriers.

A voucher scheme has already been tried in this area, and was abandoned in favour of the current equipment arrangements. In the mid-1990s a voucher scheme was used to provide TTYs or modems to people who required them. After the *TCPSS Act* was passed, responsibility for providing such equipment passed to the carriers. The original scheme was operated under contract by ACE, which advertised the scheme, issued forms, assessed eligibility and issued vouchers. The vouchers were presented to suppliers such as Printacall or Wordofmouth Technology. The voucher covered the cost of a basic unit, leaving consumers free to pay the difference for a model with additional features.

The experience with the previous voucher scheme and with a similar Australian Government scheme for hearing aids suggests that this is a viable alternative to the carriers providing disability equipment. However, the carriers are not likely to find such an approach attractive, because it would give them less control over the costs of such a system.

Commercial justification

Under the *DDA*, carriers that provide equipment with their provision of a STS must make arrangements to provide appropriate equipment to a consumer with a disability, unless by doing so they would suffer financial hardship. Some telecommunications disability equipment is considerably more expensive than standard equipment — for example, a Uniphone™ can cost nearly ten times as much as a standard handset, and a Braille-TTY is nearly 20 times the value of a Uniphone™. While these units are not provided in large quantities, since the carriers that are required to provide them can only recoup the same rental for these units as for standard equipment, it is often argued that not only is there no commercial justification for providing the equipment in this manner, but that there is no commercial justification in offering disability equipment at all.

Having a sole supplier that is dedicated to the supply of telecommunications disability equipment could potentially remove the need for commercial justification, however, it again raises the question of how the shopfronts will be funded and staffed. There is also a question of how many people would go to a dedicated shopfront. Part of the reason that Telstra shut down its Aged and Disability Centres was because they received almost no visitors, yet focus group participants felt that they should have remained open.

In a related point, the ILCs display telecommunications disability equipment that is provided through the current equipment arrangements, as well as for a range of other products designed for the aged and people with disabilities, however, almost none of the focus group participants reported having visited an ILC shopfront.

9.3 Findings summary

- On the basis of an estimated average cost of $80 for providing equipment to consumers with disabilities, the cost of existing disability programs in 2003-04 was less than $1.5 million.
- There is a limit to the extent to which universal design concepts can meet the needs of consumers with disabilities. Products such as the new standard handsets that incorporate a volume control, or the big button multi-purpose phone go some way towards meeting the needs of a large group of people, however, they do not meet the needs of people who are severely hearing or speech impaired, or blind.

Universal design concepts are more likely to meet the needs of people who acquire a disability over time (for example, through ageing), or people with a mild disability, because they make up a larger share of the disabled community. This means that the average cost of equipment that is supplied through the current equipment arrangements will increase, because more sophisticated non-standard equipment will be needed to meet the needs of consumers who are unable to use the evolving standard products. The proportion of the population who continue to require non-standard equipment may fall over time. However, there is a risk that these people may become more marginalised if the demand for non-standard equipment falls over time.

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Appendix B

Stakeholders consulted

Regulators

- Australian Communications and Media Authority (ACMA)
- Australian Communications Industry Forum (ACIF)
- Australian Government Department of Communications, Information Technology and the Arts
- Human Rights and Equal Opportunity Commission (HREOC)
- Telecommunications Industry Ombudsman (TIO)

Users

- Australian Association of the Deaf (AAD)
- Blind Citizens Australia (BCA)
- Deafness Forum of Australia
- Telecommunications and Disability Consumer Representation (TEDICORE)
- Vision Australia
- Women With Disabilities Australia (WWDA)

Carriers

- AAPT
- Primus
- Optus
- Telstra

Others

- Australian Communication Exchange (ACE) — NRS provider
- Australian Mobile Telecommunications Association (AMTA) — mobile phone peak body
- Independent Living Centres Australia — disability information and resource centres
- Printacall — private company and TTY supplier

Appendix C

Focus groups

Sydney, Wednesday 29 March 2006

The focus group in Sydney consisted of 11 participants. The discussion on the day was focused on access to telecommunications for people:

- with hearing impairment (including people who were deaf);
- with speech impairment;
- with vision impairment (including people who were blind);
- with mobility or dexterity impairment; and
- with an intellectual disability.

In preparation for the Sydney focus group, several organisations were approached for assistance in identifying focus group participants. These organisations are outlined in Box C.1.

Box C.1

ORGANISATIONS APPROACHED FOR ASSISTANCE IN IDENTIFYING SYDNEY FOCUS GROUP PARTICIPANTS

The organisations contacted for the Sydney focus group were:

- New South Wales Disability Information and Referral Centre;
- Better Hearing Australia;
- Vision Australia;
- Blind Citizens Society;
- Deafness Forum Australia;
- Australian Association of the Deaf;
- Independent Living Centre NSW;
- Carers New South Wales;
- Adult deaf Society;
- People with Disabilities Australia;
- the Physical Disabilities Council of Australia;
- the Council of Intellectual Disabilities Australia;
- Eastern Respite and Recreation Services; and
- Disability Services Australia — NSW branch.

Coffs Harbour, Thursday 30 March 2006

The focus group in Coffs Harbour consisted of 9 participants. The discussion on the day was focused on access to telecommunications for people:

- with hearing impairment;
- with vision impairment (including people who were blind); and

- with mobility or dexterity impairment.

In preparation for the Coffs Harbour focus group, several organisations were approached for assistance in identifying focus group participants. These organisations are outlined in Box C.2.

Box C.2

ORGANISATIONS APPROACHED FOR ASSISTANCE IN IDENTIFYING COFFS HARBOUR FOCUS GROUP PARTICIPANTS

The organisations contacted for the Coffs Harbour focus group were:

- Vision Australia; and
- Coffs Harbour City Council.

Townsville, Wednesday 5 April 2006

The focus group in Townsville consisted of 5 participants. The discussion on the day was focused on access to telecommunications for people:

- with mobility or dexterity impairment; and
- with a vision impairment.

In preparation for the Townsville focus group, several organisations were approached for assistance in identifying focus group participants. These organisations are outlined in Box C.3.

Box C.3

ORGANISATIONS APPROACHED FOR ASSISTANCE IN IDENTIFYING TOWNSVILLE FOCUS GROUP PARTICIPANTS

The organisations contacted for the Townsville focus group were:

- Women with Disabilities;
- Australian Association of the Deaf;
- Blind Citizens Australia;
- Deafness Forum of Australia;
- Disability Resources Officer at James Cook University;
- Queenslanders with a Disability Network;
- Independent Advocacy in the Tropics;
- LifeTec Queensland;
- Disability Forum;
- the Cootharinga Society;
- Queensland Aged and Disability Advocacy;
- Royal Blind Foundation;
- Regional Disabilities of Queensland;
- Queensland Minister for Disability Services;
- Disability Services Queensland — North Queensland region;
- Queensland Deaf Society;
- Capabilities Employment;
- Queensland Blind Association;
- Townsville Vision Impaired Persons Support Group; and
- Spinal Injuries Association — North Queensland.

Mildura, Wednesday 5 April 2006

The focus group in Mildura consisted of 2 participants. The discussion on the day was focused on access to telecommunications for people with vision impairment (including blindness).

In preparation for the Mildura focus group, several organisations were approached for assistance in identifying focus group participants. These organisations are outlined in Box C.4.

Box C.4

ORGANISATIONS APPROACHED FOR ASSISTANCE IN IDENTIFYING MILDURA FOCUS GROUP PARTICIPANTS

The organisations contacted for the Mildura focus group were:

- Women with Disabilities;
- Deafness Forum of Australia;
- Blind Citizens Australia;
- Australian Association of the Deaf;
- Vision Australia;
- Regional Information and Advocacy Council;
- the Christie Centre;
- Bendigo Health;
- Loddon-Mallee Carer-Support Services;
- the Supported Residential Service;
- Carer Support Services;
- Mildura Rural City Council Aged and Disability Services;
- Families of Children with Disabilities;
- Better Hearing Adelaide; and
- Mildura Education Centre — Student Service Centre.

Brisbane, Thursday 6 April 2006

The focus group in Brisbane consisted of 9 participants. The discussion on the day was focused on access to telecommunications for people:

- with hearing impairment (including people who were deaf);
- with vision impairment (including people who were blind); and
- with mobility or dexterity impairment.

In preparation for the Brisbane focus group, several organisations were approached for assistance in identifying focus group participants. These organisations are outlined in Box C.5.

Box C.5

ORGANISATIONS APPROACHED FOR ASSISTANCE IN IDENTIFYING BRISBANE FOCUS GROUP PARTICIPANTS

The organisations contacted for the Brisbane focus group were:

- Women with Disabilities;
- Deafness Forum of Australia;
- Blind Citizens Australia;
- Disability Services Queensland;
- Queensland Deaf Society; and
- Queenslanders with a Disability Network.

Hobart, Thursday 6 April 2006

The focus group in Hobart consisted of 12 participants. The discussion on the day was focused on access to telecommunications for people:

- with hearing impairment;
- with vision impairment (including people who were blind); and
- mobility or dexterity impairment.

In preparation for the Hobart focus group, several organisations were approached for assistance in identifying focus group participants. These organisations are outlined in Box C.6.

Box C.6

ORGANISATIONS APPROACHED FOR ASSISTANCE IN IDENTIFYING HOBART FOCUS GROUP PARTICIPANTS

The organisations contacted for the Hobart focus group were:

- Women with Disabilities;
- Deafness Forum of Australia;
- Blind Citizens Australia;
- Tasmanians with Disabilities;
- Carers Tasmania;
- Migrant Resource Centre of Southern Tasmania; and
- Aged and Disability Care Information Service.

Melbourne, Friday 7 April 2006

The focus group in Melbourne consisted of 9 participants. The discussion on the day was focused on access to telecommunications for people:

- with hearing impairment (including people who were deaf);
- with speech impairment; and
- with vision impairment (including people who were blind).

In preparation for the Melbourne focus group, several organisations were approached for assistance in identifying focus group participants. These organisations are outlined in Box C.7.

Box C.7

ORGANISATIONS APPROACHED FOR ASSISTANCE IN IDENTIFYING MELBOURNE FOCUS GROUP PARTICIPANTS

The organisations contacted for the Melbourne focus group were:

- Women with Disabilities;
- Deafness Forum of Australia;
- Blind Citizens Australia;
- Better Hearing Australia;
- Australian Association of the Deaf;
- Vision Australia;
- SCOPE Victoria;
- Disability Rights Victoria;
- Yooralla;
- Communication Aid Users Society; and
- Advocacy House.

Perth, Monday 10 April 2006

The focus group in Perth consisted of 7 participants. The discussion on the day was focused on access to telecommunications for people:

- with hearing impairment (including people who were deaf);
- with speech impairment; and
- with vision impairment (including people who were blind).

In preparation for the Perth focus group, several organisations were approached for assistance in identifying focus group participants. These organisations are outlined in Box C.8.

Box C.8

ORGANISATIONS APPROACHED FOR ASSISTANCE IN IDENTIFYING PERTH FOCUS GROUP PARTICIPANTS

The organisations contacted for the Perth focus group were:

- Women with Disabilities;
- Deafness Forum of Australia;
- Blind Citizens Australia;
- Better Hearing Australia;
- Australian Association of the Deaf;
- Association for the Blind, WA;
- Disability First Stop; and
- People with Disabilities WA.