

# Telecommunications

## Performance Report 2004-05



© Australian Communications and Media Authority 2005

This work is copyright. Apart from any use as permitted under the *Copyright Act 1968*, no part may be produced by any process without prior written permission from the Australian Communications and Media Authority.

Requests and enquiries concerning reproduction and rights should be addressed to:

Manager Communications/Media  
Australian Communications and Media Authority  
PO Box 13112 Law Courts  
Melbourne Vic 8010

ISSN 1833-0762



**Australian Government**  
**Australian Communications  
and Media Authority**

---

Level 15 Tower 1 Darling Park  
201 Sussex Street Sydney NSW

---

Tel: (02) 9334 7700, 1800 226 667  
Fax: (02) 9334 7799

---

PO Box Q500  
Queen Victoria Building NSW 1230

---

[www.acma.gov.au](http://www.acma.gov.au)

Senator the Hon. Helen Coonan  
Minister for Communications, Information Technology and the Arts  
Parliament House  
Canberra ACT 2600

Dear Minister

I am pleased to provide you with the Australian Communications and Media Authority's report on telecommunications performance for 2004–05. The report has been prepared in accordance with section 105 of the *Telecommunications Act 1997*.

Please note that subsection 105(8) of the *Telecommunications Act 1997* requires that you table the report in each House of the Parliament within 15 sitting days of that House after receiving the report.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Lyn Maddock', written in a cursive style.

**Lyn Maddock**  
Acting Chair

17 November 2005



# Contents

C

<b>Chapter 1: Executive summary and industry developments in 2004–05</b>	<b>1</b>
Telecommunications industry developments	1
Telecommunications regulation and industry self-regulation	7
Consumer issues	7
Telecommunications Industry Ombudsman membership and carrier licensing trends	9
Sources of information for this report	11
<b>Special item: Vision 20/20</b>	<b>13</b>
Key findings	13
Strategic landscape	14
Regulatory challenges	16
<b>Chapter 2: Benefits resulting from changes in telecommunications services</b>	<b>21</b>
Key findings	21
Developments in the telecommunications sector in 2004–05	22
Estimating benefits from telecommunications services	26
Consumer and small business benefits	27
Impacts on welfare measures	28
Regional analysis	29
Summary	31
<b>Chapter 3: Consumer issues</b>	<b>33</b>
Overview	33
Unfair terms in consumer contracts	34
Consumer Driven Communications project	36
Financial hardship and telecommunications	37
Privacy and the protection of personal information	41
Consumer complaints	42
Accessible telecommunications for people with disabilities	51

**Chapter 4: Fixed telephone services****57**

Key results	57
Fixed telephone services market	58
Usage trends and price movements	60
Service quality improvements	62
Consumer satisfaction survey	64
Telecommunications Industry Ombudsman complaints	66

**Chapter 5: Mobile telecommunications services****69**

Highlights and overview	69
Mobile phone penetration rates	70
Carrier networks	71
Mobile handsets	76
Market shares	77
Carriage service providers	79
Text and data applications	79
Outcomes for consumers	80
Content services	89
Premium rate mobile content services	91
Industry initiatives	95

**Chapter 6: The internet****99**

Key findings	99
Analytical model for the internet	100
Internet subscriber trends	102
Internet service provider trends	104
Consumer issues	104
Internet usage	105
Policy, regulatory, industry and user responses to internet issues	111
Subscription television	119

**Special item: spam****121**

Case study 1: internet pyramid marketing scheme	122
Case study 2: car trading advertising	122
Case study 3: racing tips software advertising	123

**Chapter 7: Self-regulation through codes and standards****125**

Highlights	125
Code development and code signatories	126
Code complaints and compliance	128
Technical standards	135
Cabling regulation	136
Australian industry involvement in international telecommunications standardisation	138

## **Chapter 8: Operation of the Customer Service Guarantee scheme, the universal service regime and the Network Reliability Framework** 145

Key developments	145
Customer Service Guarantee	146
Mass service disruptions	148
Priority assistance	148
Network Reliability Framework	149
Universal service obligation	152
Digital data service obligation	154
USO funding	158

## **Chapter 9: Remote Indigenous communities – telecommunications issues** 161

Key developments	161
Telecommunications product and service trials	162
Data collection and monitoring of telecommunications needs and services in remote Indigenous communities	164

## **Chapter 10: Community and national interests** 175

Key developments	175
Emergency call service	176
Provision of assistance to law enforcement and national security agencies	183
Integrated Public Number Database	184
Disclosure of customer information	186
Installation of telecommunications facilities – carriers' rights and obligations	188

## **Chapter 11: Facilitating competition** 193

Key developments	193
Allocation of numbers	194
Domain name administration	197
Number portability	198
Numbering for new telecommunications services	200
Applications from industry for new standard zone units	200
Voice over internet protocol services	201
<b>smart</b> numbers®	201
ENUM	203

## **Glossary** 204

## **Index** 216

C

# chapter

# 1

# 1

## CHAPTER 1: EXECUTIVE SUMMARY AND INDUSTRY DEVELOPMENTS IN 2004-05

Telecommunications industry developments	1
<i>Internet services and subscription</i>	2
<i>Mobile services</i>	3
<i>Fixed telephony services</i>	3
<i>Snapshot of key telecommunications indicators</i>	4
<i>Emergence of voice over internet protocol services</i>	6
<i>Convergence</i>	6
Telecommunications regulation and industry self-regulation	7
Consumer issues	7
<i>Service provision to remote Indigenous communities</i>	8
Telecommunications Industry Ombudsman membership and carrier licensing trends	9
<i>TIO membership trends</i>	9
<i>Carrier licensing trends</i>	9
<i>Carrier licensing developments: industry development plans, nominated carrier declarations and trial certificates</i>	10
<i>Eligible revenue trends</i>	11
<i>Competitive indicators</i>	11
Sources of information for this report	11



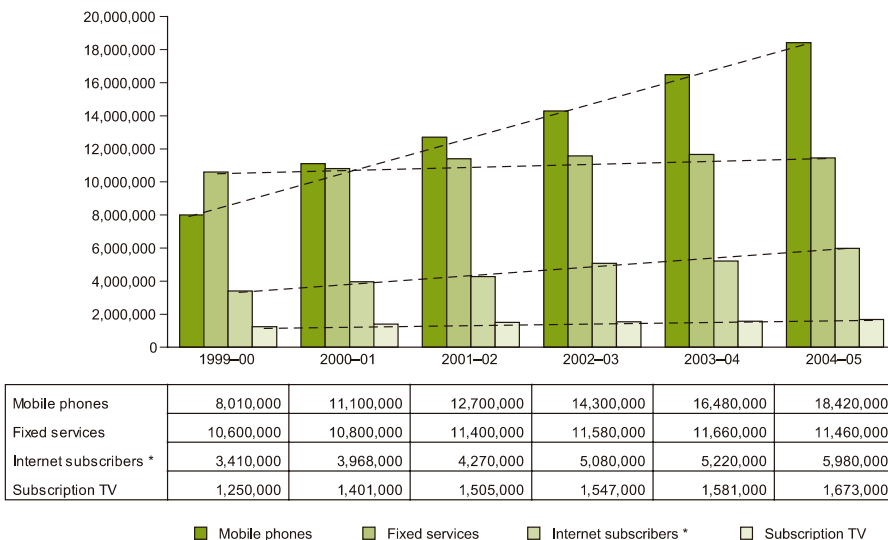
## CHAPTER 1: EXECUTIVE SUMMARY AND INDUSTRY DEVELOPMENTS IN 2004–05

Section 105 of the *Telecommunications Act 1997* establishes the requirements for the *Telecommunications Performance Report 2004–05*. The Australian Communications and Media Authority (ACMA) is to monitor and report each year to the Minister on all significant matters relating to the performance of carriers and carriage service providers (CSPs), with particular reference to consumer satisfaction, consumer benefits and quality of service.

### TELECOMMUNICATIONS INDUSTRY DEVELOPMENTS

The 2004–05 financial year was an important year in the development of the telecommunications industry, as emerging trends during the year foreshadow the future directions of the industry, such as the diminishing relative importance of the traditional fixed line telephone service.

Figure 1.1: Trends in growth of mobile phone, fixed, internet and subscription television services, 1999–00 to 2004–05



Source: Industry and ABS data

\* Internet subscription figures are as at 31 March for each year

Linear growth trends over the last six years in the three primary telecommunications services—mobile phone, fixed and internet are represented in Figure 1.1. Trends for subscription television services—sometimes provided using the same infrastructure as telecommunications services—are included for comparison.

As discussed in Chapter 2, the estimated benefits to economic welfare arising from the telecommunications industry were substantial in 2004–05. It is estimated that the Australian economy in 2004–05 grew by around \$2 billion compared with the reference case of an economy that did not benefit from the competition reforms of 1997, which opened the telecommunications sector up to new entrants. The analysis also details strong growth in investment, benefits to small business, jobs and household consumption from competition and new technologies in the industry, as quantified in this chapter.

## 1

## Internet services and subscription

As detailed in Chapters 2 and 6, there was an exceptional 108 per cent increase in the number of broadband internet subscribers during 2004–05, with subscribers numbering 2.2 million at 30 June 2005. The increase in the volume of data downloaded on broadband internet services over the 12 months to 31 March 2005 was even greater, at 230 per cent. Complementing and stimulating this rapid growth were substantial decreases in the prices per Gigabyte of ADSL and cable broadband services.

During 2004–05, higher data rate terrestrial broadband services became increasingly available, with 73 per cent of the Australian population estimated as having access to terrestrial broadband services, a 6.9 per cent increase from the previous year (see Chapter 2). These broadband developments are providing the platform for the mainstream take-up of broadband content services such as video and movies, and are expected to strongly influence the development and integration of broadcasting and telecommunications services in coming years.

In 2004–05, wireless broadband networks were in development or being rolled out in regional, rural and remote areas. The Australian Government's Higher Bandwidth Incentive Scheme (HiBIS) has contributed to this growth, providing subsidies to internet service providers (ISPs) for supplying higher bandwidth services to regional areas at a comparable cost to metropolitan areas. At 30 June 2005, approximately 4,000 (or 11.5 per cent) of HiBIS customer connections were by wireless. Wireless broadband networks were also established and expanded in metropolitan areas during the year.

At least 26 of the 40 new carrier licences issued in 2004–05 by ACMA's predecessor, the Australian Communications Authority (ACA), were to carriers proposing to deploy broadband wireless access technologies. Although wireless broadband subscribers constituted a low percentage of total broadband subscribers at 30 June 2005, wireless is expected to play an increasingly important role in the provision of broadband services. ACMA's October 2005 report, *Telecommunications Services Available in Australia 2004–05: A report on the availability of fixed voice, mobile and data services in Australia*, provides a comprehensive review of the availability of broadband services throughout Australia.

As an indicator of the transition of dial-up internet subscribers to broadband internet services, the Australian Bureau of Statistics (ABS) reported that the number of dial-up or narrowband internet subscribers decreased by four per cent during the year to March 2005. The ABS also reported that, at March 2005, dial-up internet subscribers accounted for 70 per cent of total internet subscribers, illustrating the potential for growth in broadband internet subscription in the next few years. Dial-up internet subscribers accounted for only 13 per cent of internet data downloaded in the quarter ending March 2005, indicating that the total volume of internet data downloaded is likely to continue to expand rapidly, associated with the migration of dial-up subscribers to broadband services.

While the rate of substitution of dial-up to broadband services was still low in 2004–05, it is expected to increase rapidly in 2005–06 and following years. The increase is expected to be generated by decreasing broadband prices, expanded broadband service availability, bundling of diverse service offerings by CSPs offering broadband and other telecommunications services, and increased broadband data rates with associated new applications.

## Mobile services

In 2004–05, the strong growth in the number of mobile phone services of recent years continued, with mobile penetration in Australia at 90 per cent of the population (see Chapter 5). Mobile subscribers increased by 12 per cent to 18.4 million at 30 June 2005, which was matched by a 12 per cent increase in call volumes over the 12 months to 31 March 2005.

Much of this mobile phone subscriber growth resulted from the entry of price-sensitive customers into the market, with the most substantial increase in mobile phone customers occurring in the pre-paid residential market. Pre-paid customers constituted 51 per cent of second generation (2G) retail mobile accounts at 30 June 2005, up from 48 per cent in the previous year. The number of mobile handsets sold in 2004–05 was a sizeable 7.7 million, up from 7.1 million in the previous year.

Terrestrial mobile networks continued their incremental geographic expansion during the year. The land area of Australia covered by CDMA networks at 30 June 2005 was 21 per cent (up from 19 per cent in 2003–04) and eight per cent for GSM networks, consistent with the previous year's figure. The aggregated population coverage in Australia in 2004–05 exceeded 98 per cent for CDMA and 96 per cent for GSM networks.

A new 3G network was launched during the year, bringing the number of 3G networks in Australia to two and the total number of terrestrial mobile networks to seven. 3G networks, which enable a variety of content services in addition to voice telephony, are expected to drive mobile service revenue and market differentiation as providers package and bundle varied service offerings.

There were 6.7 billion short message service (SMS) messages sent in 2004–05, an increase of 33 per cent from 2003–04. There was also a rapid increase in the number of messages sent using a multimedia messaging service (MMS) in 2004–05, with 49.8 million sent, up from 13.7 million in the previous year. The use of MMS is expected to increase as customers become more accustomed to the service and the penetration level of handsets capable of sending and receiving MMS messages rises.

## Fixed telephony services

Although fixed telephony services remain a very significant sector of the telecommunications industry, there were strong indications in 2004–05 that the significance of this sector is declining. During 2004–05, there was a decline in the number of fixed-line subscribers of 1.7 per cent, with associated declines in call volumes and revenues in the local, long distance, international and fixed-to-mobile markets (see Chapters 2 and 4).

Demonstrating a similar trend to that of the total fixed service population, the number of services covered by the provisions of the Customer Service Guarantee (CSG) Standard declined by four per cent to 8.96 million in 2004–05, down from 9.33 million in 2003–04. The CSG Standard applies to residential and small business customers with five or less standard telephone services.

Fixed-to-mobile substitution appears to be driving the decline in fixed services, with line rental charges remaining a substantial component of fixed service charges.

Chapter 8 discusses the improved industry performance in 2004–05 in connecting services and repairing faults for fixed telephone services within the specified timeframes of the CSG. Both Telstra and Optus consistently completed 90 per cent or more of CSG connections and fault repairs within the required timeframes in the urban and rural areas of every state and territory. Although the proportion of Telstra CSG faults repaired within CSG timeframes improved slightly in 2004–05, the total number of Telstra CSG faults increased by two per cent to 828,858. This increase was caused by an increase in faults in urban areas.

Based on data for the period since January 2003, ACMA estimates that 90 per cent of Telstra CSG-eligible services do not have a fault in a year. The percentage of Telstra CSG service availability in 2004–05 was 99.94 per cent and, for services that experienced a fault, the monthly average time that a service was unavailable was 51 hours. These performance results are unchanged from 2003–04.

## Snapshot of key telecommunications indicators

This report contains a wide variety of telecommunications industry data for 2004–05, discussed in the respective chapters. For ease of reference, Table 1.1 provides a snapshot of key telecommunications indicators at 30 June 2005, compared with 30 June 2004.

Table 1.1 Snapshot of key telecommunications indicators at 30 June 2004 and 2005

Measure	30 June 2004	30 June 2005	% change
Internet subscribers (31 March)	5.22 million	5.98 million	15%
Dial-up subscribers (31 March)	4.36 million	4.18 million	-4%
Broadband subscribers (30 June)	1.048 million	2.183 million	108%
Telecommunications Industry Ombudsman (TIO) complaints per 1,000 internet services in operation	2.00	2.68	34%
TIO complaint issues concerning internet services	10,388	16,012	54%
Percentage of all spam in Australia originating from Australia	2%	1%	-50%
Number of ISPs (31 March)	694	689	-1%
Subscription television (Pay TV) subscribers	1,581,000	1,673,000	6%
Mobile services in operation	16.48 million	18.42 million	12%
Pre-paid mobile services (retail only)	7.08 million	8.50 million	20%
Post-paid mobile services (retail only)	7.69 million	8.02 million	4%
Mobile penetration rate as a proportion of the Australian population	82%	90%	10%
TIO complaints per 1,000 mobile phone services in operation	1.30	2.19	68%
TIO complaint issues concerning mobile services	21,465	40,254	88%
Mobile numbers allocated by the ACA	2.42 million	6.50 million	169%
Mobile handsets sold in Australia	7.1 million	7.7 million	8%
GSM coverage as a percentage of the population	96%	96%	0%
CDMA coverage as a percentage of the population	98%	98%	0%
GSM coverage as a percentage of Australia's land area	8%	8%	0%
CDMA coverage as a percentage of Australia's land area	19%	21%	10%
SMS messages sent	5.078 billion	6.736 billion	33%
MMS messages sent	13.7 million	49.8 million	264%
Mobile number ports	1.120 million	1.285 million	15%
Fixed lines	11.66 million	11.46 million	-2%
Services covered by the CSG	9.330 million	8.958 million	-4%

Table 1.1 Snapshot of key telecommunications indicators at 30 June 2004 and 2005 continued

Measure	30 June 2004	30 June 2005	% change
TIO complaints per 1,000 fixed services in operation	3.10	3.89	25%
TIO complaint issues concerning fixed lines	36,167	44,559	23%
Geographic numbers allocated by the ACA	664,000	10,756,000	1,520%
Geographic numbers allocated by the ACA (metro)	473,000	1,968,000	316%
Geographic numbers allocated by the ACA (non-metro)	191,000	8,788,000	4,501%
smartnumbers® allocated through public auctions	–	10,339	–
smartnumbers® allocated to charities	–	165	–
Local number ports	334,000	580,000	73%
Payphones—services in operation	64,803	61,735	–5%
Telstra payphone sites	24,602	23,495	–5%
TIO members	1,043	1,135	9%
Total TIO complaint issues	68,020	100,825	48%
TIO complaints resolved by conciliation	6,144	7,689	25%
Credit default listings with Baycorp Advantage—CSPs and ISPs	365,000	595,000	63%
Registered industry codes	21	25	19%
Companies signed up to at least one industry code	17	66	288%
Total number of code signatories	76	115	51%
Code breaches assessed by the TIO as established or confirmed	485	589	21%
Total licensed or registered cablers	57,502	55,042	–4%
Calls to emergency services using 000 and 112	12,741,247	10,807,627	–15%
Calls to 000 and 112 transferred to emergency service organisations	4,015,738	4,196,430	4%
Calls to the 106 text emergency call service	211,318	315,711	49%
Calls to the 106 emergency call service relayed to emergency service organisations	298	291	–2%
Connected records in the Integrated Public Number Database	39,725,114	43,585,833	10%
Interim and alternative services provided by Telstra under the universal service obligation (USO)	3,794	4,085	8%
Authorised disclosures of customers' personal information	700,871	885,466	26%

## Emergence of voice over internet protocol services

During 2004–05, there was considerable consumer and industry interest in the future role of voice over internet protocol (VoIP) services in the voice telephony market. While VoIP services constituted only a very small number of residential voice telephony services in 2004–05, this is expected to change rapidly in the next few years. VoIP is increasingly being used by corporate organisations to reduce the costs of their telephony services and provide greater service flexibility, although VoIP is understood also to be a relatively small sector of the corporate market.

The allocation of geographic (local) telephone numbers to service providers planning to offer VoIP services was the primary reason for the very large increase in the number of these allocations in 2004–05, with 1.97 million metropolitan and 8.79 million non-metropolitan geographic numbers allocated during the year (see Chapter 11). The demand for geographic numbers was more than 14 times the average annual demand over the last three years.

At public workshops held during 2004–05, the Department of Communications, Information Technology and the Arts (DCITA), the Australian Competition and Consumer Commission and the ACA jointly canvassed some of the regulatory implications of VoIP—such as ensuring appropriate access to emergency services—in anticipation of VoIP services increasingly entering the voice services market.

As discussed in Chapter 6, the rapid expansion of broadband services in Australia in 2004–05 has established a platform for the mainstream take-up of VoIP services. ACMA will be monitoring developments in VoIP closely during 2005–06 and reporting on associated trends and emerging issues.

## Convergence

The government's decision to establish ACMA from a merger of the ACA and the Australian Broadcasting Authority (ABA) recognised that the new organisation would be better placed to deal with increasing industry convergence. This convergence of the telecommunications industry with the broadcasting, information technology and entertainment industries, propelled by the proliferation of digital technologies and applications, may lead to profound changes in the dynamics and structure of the telecommunications and associated industries.

Broadcasting content is expected to be increasingly integrated with telecommunications, with some examples of this integration evident in 2004–05 on new generation mobile devices. For example, there were two million video downloads averaging five minutes each of the *Big Brother* reality TV series live video stream by Hutchison 3 users to their mobile handsets (see Chapter 5). Another example was the launch by Vodafone Live! of a 'soap opera' with two daily 'mobisodes' about young people living at Sydney's Bondi Beach. Although containing only still photos, this service is a precursor of episodic services incorporating video and sound on mobile handsets.

Optus Zoo and Telstra, through its i-mode platform, were among other providers offering mobile content services during 2004–05. The greater data rates achievable on broadband services have laid the foundation for a variety of broadcasting applications to develop, such as internet protocol television (IPTV), which streams TV programs using broadband connections and may be delivered over IP-based networks other than the internet.

The advent of convergent services such as mobile content services is also creating new challenges for the industry and regulators. During 2004–05, the ACA introduced new regulations to ensure suitable arrangements are in place to protect young consumers from accessing age-restricted content on mobile phones (see Chapter 5).

The ACA completed its 'Vision 20/20' project in 2004–05, which was a response to significant changes in the telecommunications environment. Extensive consultation was undertaken with interested parties—both in and outside the telecommunications industry—to identify some key opportunities, impediments and challenges to the Australian polity and the regulation of the converged industries over the next 10 to 15 years (see the Special item: Vision 20/20).

ACMA considers that, along with the rest of the developed world, Australia is on the threshold of a new era of communications, with fluid industry dynamics, strong challenges to incumbent operators and an increasingly diverse range of service offerings available.

## TELECOMMUNICATIONS REGULATION AND INDUSTRY SELF-REGULATION

The increasingly diverse nature of the telecommunications industry was illustrated by developments in industry self-regulation in 2004–05, although the Australian Communications Industry Forum (ACIF) continued its pre-eminent self-regulatory role in the industry.

New codes are discussed in Chapter 7. During the year, the electronic marketing industry developed the *Australian eMarketing Code of Practice*, which was registered by the ACA on 16 March 2005 and had 26 signatories at 30 June 2005. The *Cabling Requirements for Business Code*, developed by the cabling industry and registered by the ACA in 2003–04, had 22 signatories at 30 June 2005, compared with none at the end of the previous year. Before 2004–05, only ACIF codes had signatories. The development of a ‘Spam Code’ by the Internet Industry Association, in conjunction with the West Australian Internet Association and South Australian Internet Association, was also well advanced at the year’s end.

Three new ACIF codes were registered and five existing ACIF codes revised and re-registered by the ACA during 2004–05. The disappointing trend in recent years of a reduction in ACIF code signatories continued—with signatories reducing from 89 at 30 June 2003 to 76 at 30 June 2004, and then to 67 by 30 June 2005.

Compliance with ACMA-registered telecommunications codes is also discussed in Chapter 7, with the need for a more positive attestation to compliance evident in previous years, a continuing cause of concern in 2004–05. The number of complaints to the Telecommunications Industry Ombudsman (TIO) relating to the 14 registered codes for which he has accepted conferral of powers was 6,764 in 2004–05, a 32.3 per cent increase from the 5,111 complaints received in 2003–04 relating to 13 registered codes.

Chapter 7 discusses the actions undertaken by the cabling industry in 2004–05 to improve the quality of cabling work and take on greater responsibility for its own regulation, which is underscored by the development of the *Cabling Requirements for Business Code*. Based on ACMA licence and registration data, there were approximately 55,000 cablers in the industry at 30 June 2005, representing a sizeable employment sector of the telecommunications industry. Compliance with cabling requirements improved in 2004–05, with compliance based on ACA audits or inspections at 70 per cent, six percentage points higher than the previous year.

Although the problem of spam continued to confront Australian email users in 2004–05, there were signs that the introduction of the *Spam Act 2003* and the enforcement of its provisions was reducing Australian-originated spam. The international anti-spam service company, Sophos, estimated that the proportion of global spam originating from Australia had fallen from approximately two to one per cent over 2004–05.

Chapter 6 discusses the enforcement action undertaken by the ACA in relation to spam during 2004–05, with some case studies illustrating the operation of the *Spam Act 2003* provided in the Special item: Spam. The spam problem illustrates the need for telecommunications regulation to be increasingly integrated and coordinated globally. International developments concerning spam are also discussed in Chapter 6.

## CONSUMER ISSUES

The ACA focused considerable attention on consumer issues during 2004–05, with some important milestones achieved during the year. One of the most significant of these was the registration of *Industry Code ACIF C620:2005 Consumer Contracts* (the ‘Consumer Contracts Code’) by the ACA in May 2005 (discussed in Chapter 3). This code, which experienced a prolonged gestation period, identifies and prohibits the use of unfair terms in telecommunications consumer contracts by providing an objective basis for determining the circumstances in which a contractual term is unfair, which includes taking into consideration the legitimate rights and obligations of consumers and service providers. An example of one of the new requirements of the code is that suppliers are required to issue a notice in writing, 21 days before varying a fixed period contract, and to offer the consumer the right to terminate the contract, subject to some agreed exceptions.



The ACA also began a review of the *Telecommunications (Standard Form of Agreement Information) Determination 2003*, following the registration of the Consumer Contracts Code, to ensure uniformity between these standard agreements and the requirements of this code. Part 23 of the Telecommunications Act enables providers to use a standard form of agreement with their customers to summarise the terms and conditions on which they provide their services.

1

In a welcome development, there was equal consumer and industry representation in preparing the Consumer Contracts Code, a practice that is being continued in the revision of *Industry Code ACIF C541: April 2003 Credit Management* (the ‘Credit Management Code’).

Chapter 3 discusses the problem of credit management in the telecommunications industry, with credit control complaints to the TIO increasing by more than 25 per cent in 2004–05 from the previous year. There were also 63 per cent more credit defaults listings made in 2004–05 by CSPs and ISPs to Baycorp Advantage, the largest credit bureau operating in Australia. In April 2005, ACIF began a review of the Credit Management Code to address credit management issues in telecommunications, particularly the issue of customers receiving unexpected high bills, with the aim of completing the revised code by November 2005.

The trend for all complaint contacts and complaint issues made to the TIO in 2004–05 was similar to that for credit control complaints. (The TIO records complaint contacts, which can involve multiple complaints, as well as individual complaint issues.) In 2004–05, the TIO received 78,915 complaint contacts, a 31.9 per cent increase on the 59,850 contacts received in the previous year. There was an increase of 48.2 per cent in complaint issues to 100,825, up from 68,020 in the previous year.

In 2004–05, the TIO recorded its highest ever number of complaint issues, whether measured in aggregate or as complaints per 1,000 services in operation (see Chapter 3). Complaint issues concerning fixed services—at 3.89 per 1,000 services—indicate this service category remains the most significant source of customer complaints. TIO complaint trends for specific services—mobile phone, fixed and internet services—are discussed in the respective chapters examining developments with these services.

In June 2005, Roy Morgan Research was contracted by the ACA to conduct the eighth annual consumer satisfaction survey, with this survey focused on satisfaction with fault restoration and connection of fixed services. The key findings of the survey are summarised in Chapter 4.

The proportion of customers satisfied or very satisfied with their overall fault repair was 67 per cent of residential customers and 59 per cent of business customers. For service connections, the proportion of customers satisfied or very satisfied with their new connection or transfer was 79 per cent of residential customers and 66 per cent of business customers.

The ACA and industry continued to improve the operation of some important consumer safeguards in 2004–05. A significant advance was made in reducing the number of non-genuine calls offered to the emergency call service on the numbers 000 and 112, with the number of these calls reduced by 1.93 million from 2003–04.

An incremental improvement was made in the accuracy of the records held in the Integrated Public Number Database, with action under way to ensure greater accuracy in future years. This database, one of the largest in operation in Australia, held 43.6 million records at 30 June 2005.

### Service provision to remote Indigenous communities

Various programs in recent years have focused on improving services in remote Indigenous communities—particularly for fixed telephone and payphone services. CDMA mobile phone coverage is also planned for 17 remote Indigenous communities by the end of 2006 under the government’s Extended Mobile Phone Coverage program.



Chapter 9 discusses developments in service provision in remote Indigenous communities, including the trial of new products and services—such as pre-paid telephone cards—of prospective assistance to these communities. There has been an increase in access to fixed telephone and particularly payphone services in these communities in the past two years. Nonetheless, Telstra data indicated that, at 30 June 2005, 34 per cent of remote Indigenous communities (small communities with around 10 or less people) did not have access to either of these services.

A detailed examination of the availability and performance of basic telephone services in the remote Indigenous communities of Apatula and Arnhem East is in Chapter 9, analysed in the context of the CSG and the regulatory requirements of the Network Reliability Framework.

## TELECOMMUNICATIONS INDUSTRY OMBUDSMAN MEMBERSHIP AND CARRIER LICENSING TRENDS

The *Telecommunications (Consumer Protection and Service Standards) Act 1999* requires telecommunications carriers and eligible service providers to become members of the TIO scheme. This scheme is funded in accordance with the number and proportion of consumer complaints received against members.

### TIO membership trends

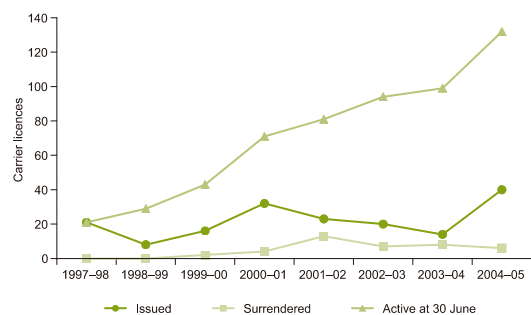
Membership of the TIO scheme increased by nine per cent to an all-time high of 1,135 members at 30 June 2005 broadly continuing the trend from the previous year, when membership increased by 15 per cent. The increase in 2004–05 was primarily from providers offering, or intending to offer, a combination of telephony and internet services. ISPs continued to dominate membership numbers, representing 67 per cent of membership—or 81 per cent of membership if providers offering both internet and telephony services are included. Despite some predictions of the consolidation of the ISP industry, TIO membership numbers indicate that it remained resilient to pressures such as bundling of service offerings by major providers. More information about the TIO scheme is in Chapter 3.

### Carrier licensing trends

The ACA issued 40 new carrier licences during 2004–05, a significant increase on the 14 issued in the previous year and the most active year on record since the advent of full competition on 1 July 1997 under the Telecommunications Act. At 30 June 2005, there were 132 licensed carriers in Australia. Six carrier licences were surrendered and one carrier licence cancelled during the year. Carrier licence trends over the last eight years are shown in Figure 1.2.

ACMA imposes charges on licensed telecommunications carriers as part of its authorised recovery of the cost of regulating the industry. The annual licence charge paid by a carrier is based on a fixed minimum amount and a variable component based on the carrier's share of 'eligible revenue' (discussed in Chapter 8).

Figure 1.2: Trends in issued and surrendered carrier licences, 1997–98 to 2004–05



The increase in licensed carriers during 2004–05 is attributed to:

- the rollout of wireless local area network base stations, influenced by the government subsidies available under HiBIS (discussed in Chapter 6)—although carrier licences are technology neutral, many new carriers have indicated to ACMA that they intend to use wireless networks to provide high-speed internet access to customers; and
- a significant reduction in the carrier licence application charge and the fixed component of the annual licence charge—in 2004–05 the application charge was reduced from \$10,000 to \$2,200 and the fixed component from \$10,000 to less than \$1,000, following a review in 2003–04. The reductions from the rates set by the ACA in 1997 have encouraged competition by making it easier for smaller players to enter the market. The application charge will be reviewed every two years and the fixed component will be re-calculated each year.

### Carrier licensing developments: industry development plans, nominated carrier declarations and trial certificates

On 30 August 2004, the Minister issued the *Industry Development Plans (Declared Kinds of Carriers) Declaration (No. 1 of 2004)*. This declaration exempted carriers with estimated annual revenues of less than one per cent of total industry revenue or annual capital expenditure that is less than \$20 million from preparing an industry development plan. (The previous criterion was annual revenue of less than \$5,000,000 and annual capital expenditure less than \$20 million.) Otherwise, before a company can become a licensed carrier, it must have an industry development plan approved by the Minister or an exemption from that requirement granted by ACMA. This change is expected to encourage competition by making it easier for smaller players to enter the market by removing a regulatory burden on new entrants.

Following the trend of recent years, nominated carrier declarations continued to attract strong interest from industry. Nominated carrier declarations enable companies that prefer not to become carriers to own and operate network units by making an existing carrier responsible for their specified network units and all carrier obligations under the Telecommunications Act. An important benefit of this arrangement is that it enables smaller service providers to enter the market and supply services to customers earlier than might otherwise have been possible.

During 2004–05, 17 nominated carrier declarations were issued and three declarations revoked, compared with 12 and seven respectively in 2003–04. At the end of 2004–05, 59 declarations were in force.

Another area of flexibility in carrier licensing arrangements is the ability for ACMA to issue trial certificates. Trial certificates allow successful applicants to trial new networks and services for a period of up to six months without the need to hold a carrier licence or nominated carrier declaration. A renewal for a further six months is available.

The trial of new networks and services allows successful applicants to test the technical, operational and commercial viability of their networks. It also allows businesses and residential consumers to benefit from innovative services provided over these networks. Trial certificates have been useful for network operators who may have been discouraged from testing and deploying innovative communications solutions because of the associated costs of becoming a carrier.

One trial certificate was issued in 2004–05, compared with four in the previous year. The reduction in the number of certificates issued may be associated with the significantly decreased cost of becoming a carrier in 2004–05, making this a more attractive option for prospective network operators than the trial arrangements.

## Eligible revenue trends

Eligible revenue assessments used to calculate the cost of fulfilling the universal service obligation (USO) confirm that Telstra remains the dominant Australian telecommunications provider. However, its share of eligible revenue is decreasing in the face of increasing competition, including from new carriers. Telstra's share of eligible revenue has dropped from 71.2 per cent in 2001–02 to 67.7 per cent in 2004–05. Telstra, Optus, Vodafone and AAPT are expected to contribute 95.3 per cent of the total cost of the USO for 2004–05. More information about eligible revenue in 2004–05 is in Chapter 8.

## Competitive indicators

Various indicators in this report point to 2004–05 as being a year of strong competition. Information in this chapter about trends in eligible revenue and carrier licences indicate increasing competition, and Chapter 2 discusses developments in price movements and service growth for key telecommunications services.

There are also less obvious indicators that illustrate aspects of telecommunications competition. Chapter 11 discusses trends in number portability, where customers change their provider of fixed or mobile phone services but keep the same fixed or mobile phone number, referred to as 'porting'. Local number ports increased substantially by 73 per cent from the previous year, with 580,000 fixed local services ported during 2004–05. While the increase in mobile service ports—at 15 per cent—was much lower, the 1.28 million mobile service numbers ported during 2004–05 indicates intense competition in this market and the benefit to consumers of facilitating their choice of service provider.

Chapter 11 also discusses trends in allocation of telephone numbers for various services. In 2004–05, the net increase from 2003–04 in mobile numbers allocated was 5.5 million, compared with the previous year's net increase of 2.4 million. More than 37.5 million mobile numbers have now been allocated. Presaging developments in the fixed service market referenced earlier in this chapter, 10.76 million geographic numbers—which provide access to local telephone and related services—were allocated by the ACA in 2004–05, compared with 660,000 in the previous year.

There was also robust competition in 2004–05 for **smartnumbers**<sup>®</sup>, specified desirable local rate and freephone numbers that were auctioned by the ACA during the year using an online system. Revenue raised from auctions of these numbers during the year was \$17.6 million.

## SOURCES OF INFORMATION FOR THIS REPORT

Forty-five carriers and CSPs were asked to provide information for this report, in addition to information from various government agencies and industry bodies. The ACA selected those carriers and CSPs to participate in the reporting arrangements on the basis of their involvement in service segments such as fixed network access and payphones, mobile telecommunications and internet access, provision of service to the residential and small business markets, and involvement in industry codes and self-regulatory processes.

# special item

S1

## **SPECIAL ITEM: VISION 20/20**

Key findings	13
Strategic landscape	14
<i>Key uncertainties</i>	15
<i>Emerging trends and developments</i>	15
Regulatory challenges	16
<i>Emerging developments</i>	17
<i>Issues of particular interest to ACMA</i>	18

## SPECIAL ITEM: VISION 20/20

In April 2005, the ACA released the final report of its Vision 20/20: Future scenarios for the communications industry – implications for regulation project.

Vision 20/20 examined the Australian communications environment within an international context. It was supported by a substantial body of project work, including the input of many people and organisations in Australia and internationally. Approximately 200 people from research institutions, industry and consumer organisations, civil society and government agencies participated through interviews, workshops and submissions.

For this project, ‘regulation’ referred to the rules governing behaviour that may be implemented and enforced by government, industry or individual users themselves and includes co-regulation and self-regulation. ‘Communications’ includes the telecommunications, radiocommunications, broadcasting and information, communications and entertainment technology (ICET) industries.

The Vision 20/20 report was designed to encourage discussion. The report does not represent the views of the Australian Government about the role of regulation now or in the future.

### KEY FINDINGS

- The communications environment is likely to be a rapidly evolving and convergent environment in the next 10 to 15 years, and the nature of that change is uncertain. The project identified a number of plausible but very different future environments.
- New business models, and new and innovative ways for users to interact with the network will emerge. The computer and consumer electronics industries are converging with communications and media.
- A globally connected and information-rich world is possible, through the migration of voice, data and multimedia to the internet, and seamless inter-connectivity between people and things. Voice over internet protocol, peer-to-peer networking and internet protocol television are likely to be the most disruptive developments for the telecommunications industry.
- Keeping pace with change will require flexibility and responsiveness. The role and nature of government and industry regulation is likely to be most heavily influenced by the spread of power and influence and levels of cooperation. Regulation will not simply be a matter of implementation at the national level as the international context will become critical in any decisions.
- Vision 20/20 challenges current assumptions about centralised control, scarcity of radiofrequency spectrum and segmented regulation. Centralised networks with end-to-end control are in decline relative to globally decentralised networks with intelligence at the edge.

- While some global management systems are in place (such as peering arrangements) there is no sign of an over-arching network management or regulatory approach to the emerging communication system. Barriers include the ‘clash of cultures’ between the IT and legacy telecommunications industries, the resolution of which will require significant mindset changes to occur.
- Emerging regulatory pressure points are likely to be in network security and integrity, privacy and equitable participation, and the need for international cooperation.

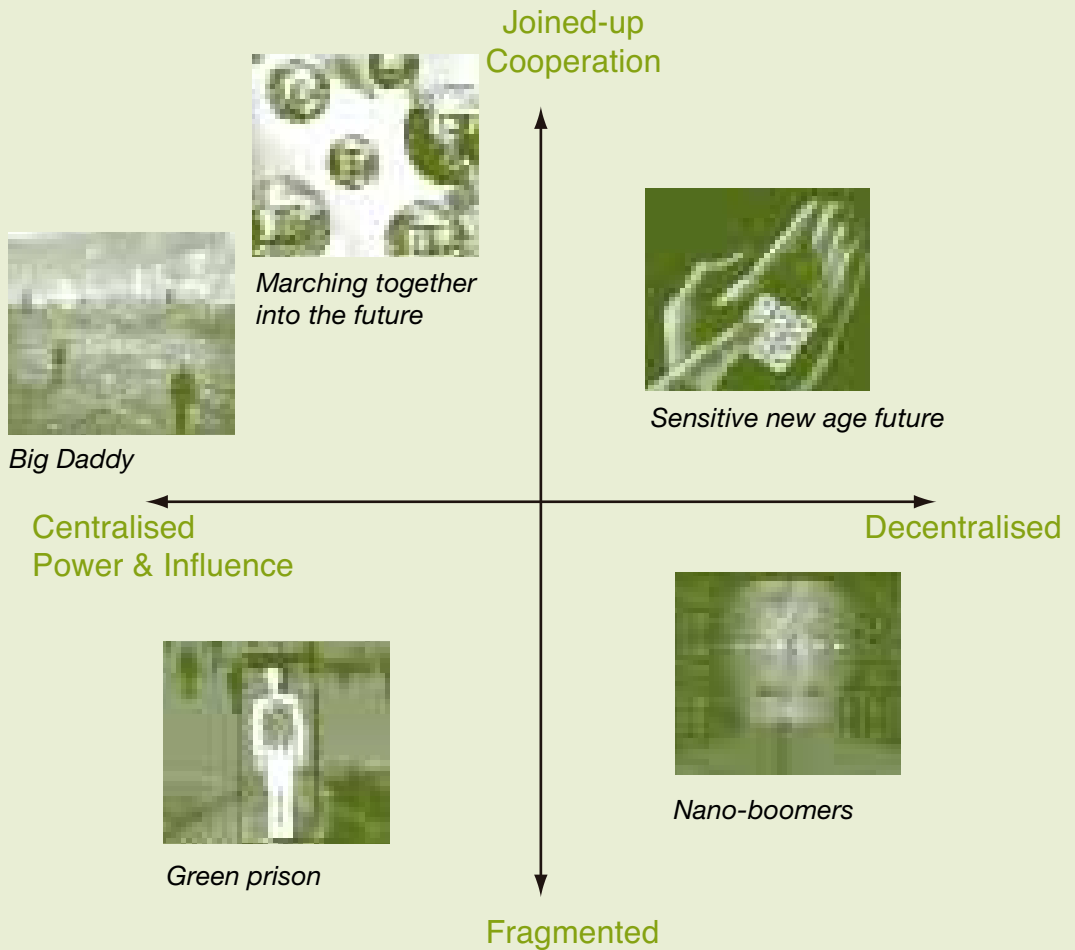
# S1

## STRATEGIC LANDSCAPE

Five scenarios were created independently by five separate groups. Each group’s uncertainties were identified from others as the ones that pose the most challenges for the future.

Figure S1.1 maps the five scenarios against the two main uncertainties for regulation: the concentration or distribution of power and influence; and whether the communications sector is joined up or fragmented. The spread of power and influence is shaped by trends and developments in geopolitics, globalisation and integration of networks and systems.

Figure S1.1: Plausible futures



## Key uncertainties

High levels of cooperation combined with decentralised power and influence may result in ever-present communications with open access to information. This would facilitate individual and consumer empowerment, competitive markets and individual and market-based responsibility, with a relatively minimal role for government regulation.

High levels of cooperation with centralised power and influence would result in the ability to connect seamlessly, although governments, corporate entities and other influential groups may largely determine and enforce rules, rights and responsibilities.

Without cooperation, communication is more likely to be fragmented and limited. Cooperation may fail where industry, users and governments lack incentives to cooperate or have different views on regulation.

Decentralised power and influence with fragmentation would result in a world where rights and responsibilities are loosely defined and observed.

Centralised power with fragmentation would lead to a lack of trust and confidence because of ineffective regulatory mechanisms. Communications service provision would be dominated by ‘walled-gardens’ where competing networks use different standards and systems.

There are some aspects of the future that are relatively certain. These may be summarised as follows:

- communications being multi-dimensional and multi-functional, embracing telecommunications, radiocommunications, broadcasting and ICET;
- communications technologies being increasingly IP-based;
- global communications systems transcending nation-state boundaries;
- individuals, organisations and governance frameworks being increasingly dependent on communications technologies and infrastructures; and
- global trends of an ageing population, rising oil prices and the development of alternative energy sources, and the consequences of climate change.

## Emerging trends and developments

A world of ubiquitous communications may evolve—an information-rich world of ever-present connectivity and distributed computational intelligence. Ubiquitous communications technologies could include smart cars, smart buildings, location and self-aware applications and devices, personalised information and services, and wearable devices. They may provide, for example, pervasive monitoring of the whereabouts of children or the health of elderly people in their homes.

The emerging communications environment is becoming more complex, with new elements and new participants. In particular, the computing and consumer electronics industries are converging with the communications and media industries. The convergent elements are multi-layered and international, with global connectivity.

Content and applications are available independently from the underlying infrastructure service provider, removing barriers to the production and distribution of digital content.

Wireless technology is expected to have a more central role in communications in the future. Research into use of the radiofrequency spectrum is considering increased spectrum sharing and software-defined radio technologies. These cover self-sharing, ad hoc and viral communications networks created by users who bring their own infrastructure and share it, without centralised management.

Network intelligence is moving to the network edges. For example, peer-to-peer technologies are changing the way users interact with the network and each other.

Falling revenue streams from traditional services over legacy networks may pose a risk to network maintenance and investment expenditure. This may affect network reliability and carrier performance against specified social and legal obligations.

S1

## REGULATORY CHALLENGES

The Vision 20/20 project discussed the incentives for governments, industry and users in realising the potential social and economic benefits of a world of ubiquitous communications.

There are obvious challenges. These include establishing consistent national and international identity and identity authentication processes, ensuring secure and low-cost electronic commerce, integrating standards and regulatory processes, establishing the need for flexible dispute-resolution services, and maintaining network integrity and reliability.

S1

Equitable participation is likely to be more critical, particularly in rapidly developing and uncertain environments. Vision 20/20 participants emphasised the social and economic impact of exclusion from communications devices and services. They also stressed the importance of universal design principles taking the needs of disadvantaged groups into consideration. Issues raised included equitable participation for people with a disability, affordability, access to skills development and geographic isolation.

International cooperation principles would need to emphasise defined public interest outcomes and promote trust in the system through transparency, monitoring and compliance mechanisms.

The protection of personal identifying information and privacy is likely to be increasingly important as more people place their personal information online and communications services are increasingly globalised.

One significant challenge will be to transform regulation to operate within a broader internationalised and interdependent environment. Critical challenges for government, industry and users also include the need to:

- understand all parts of the convergent communications industry;
- be flexible and responsive; and
- build regulatory coherence and cooperation between jurisdictions, industry bodies and communities of interest to promote equitable participation, network integrity, interoperability, and e-government and e-commerce frameworks.

In particular, understanding the emerging communications environment involves:

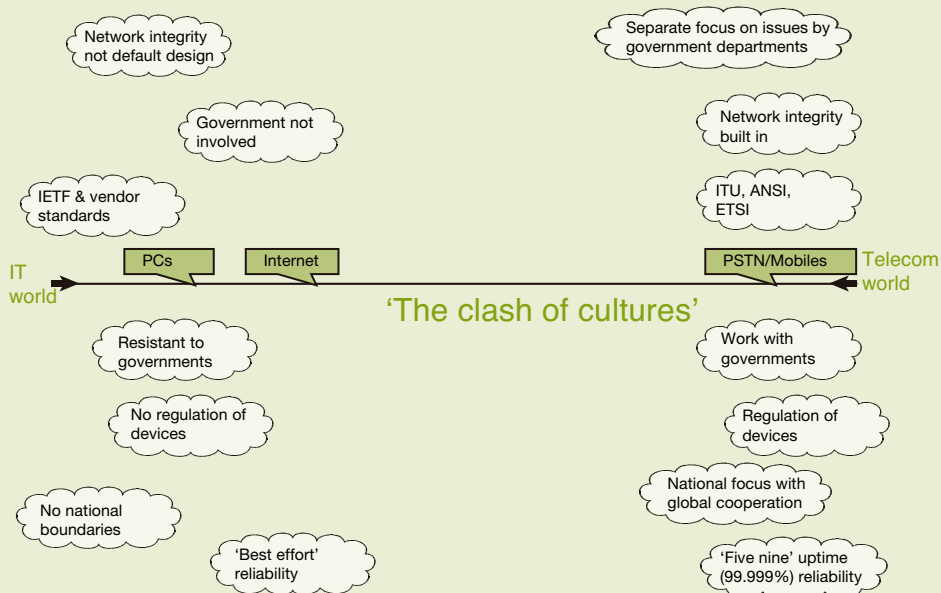
- evaluating emerging areas of societal risk in terms of self-responsibility relative to government intervention;
- dealing with different cultures and values;
- forming relationships with new entrants to the communications sector;
- learning new skills and abilities; and
- analysing problems using a ‘systems thinking’ approach rather than just examining particular elements in isolation.

The cultural challenges include the evolutionary paths that emerge from the clash between the telecommunications and IT cultures, as set out in Figure S1.2.

The internet and telecommunications sectors evolved from very different assumptions and business models. These relatively extreme cultural viewpoints must integrate into a combined approach.



Figure S1.2: The 'clash of cultures'



S1

### Emerging developments

The Vision 20/20 project identified aspects of the current telecommunications regulatory framework that will be tested by emerging developments. These are:

- Numbering plans are likely to continue operating for the next 10 to 15 years, but will start to decline in importance relative to electronic addressing, authentication and verification of identity. Fixed–mobile convergence may mean that separate national numbering plans are unlikely to be sustained over the longer term.
- Segmented regulatory arrangements such as licensing, specified quality of service standards and consumer satisfaction measures are likely to be less important in a relatively more complex, convergent and globalised communications environment.
- Law enforcement and national interest obligations, such as legal interception and location for emergency service purposes, may require supplementary solutions and changes to some existing assumptions.
- More emphasis on cross-jurisdictional relationships will be necessary.
- Smaller organisations entering the communications industry that do not have the capability (because of location or resource constraints) to be involved in traditional industry regulation forums will still need to be engaged in regulatory processes.
- Accessibility challenges will emerge—the potential social impact of new forms of communications, for example, the increase in age-related accessibility issues in the ageing population of the developed world.
- The need to promote trust and confidence in emerging communications services is likely to drive the development of new rights, responsibilities and obligations. Network integrity solutions appear to involve a mixture of government regulation, industry regulation and user responsibility.

- There will be a need for regulators to develop new relationships with global vendors, new network operators and IT systems providers to build and maintain sufficient expertise over the technical aspects of network regulation.
- A more flexible approach to radiofrequency spectrum management will be needed—with the growing reliance on and importance of the spectrum, there is a need for greater efficiency and responsiveness in spectrum allocation and use.
- There will be emerging challenges in regulating content—safeguarding users with the increase in online connectivity, private media and open distribution models, and digitalisation of content.
- IP-based services will have multiple layers managed or provisioned by separate entities, for example, content provided independently of the network operator. It may be more effective to deal with content problems at the applications layer rather than the physical network layer.

S1

### Issues of particular interest to ACMA

To keep regulation contemporary and effective, ACMA will need to monitor developments in service convergence that may affect its regulatory responsibilities.

The findings of the Vision 20/20 project emphasise the importance of developing and implementing a more comprehensive, whole-of-business approach to emerging regulation problems in consultation with other government bodies, industry and users. This approach should help in responding to:

- risks to network security and integrity;
- issues arising from voice, data and multimedia convergence;
- market-based approaches to VoIP and public switched telephone network interconnection; and
- risks to legacy network reliability and accessibility.

The approach should be supported by broader measures of consumer benefit and consumer satisfaction, and by working more closely with bodies such as the ACCC on the technical aspects of internet peering and interconnectivity arrangements.

Vision 20/20 participants also highlighted the importance of promoting a ‘networked regulation’ approach within and between government agencies and international regulatory bodies that:

- draws on specialist knowledge and networks between individuals and organisations;
- incorporates the views of associated regulatory agencies to ensure a strategic ‘communications systems’ approach is taken, including cross-layer effects, to proposed interventions;
- supports a self-organising ‘viral regulation’ dynamic—participative online inter-working that is responsive and adaptive, where solutions multiply, adapted to suit policy and cultural preferences—as an effective complement to more formal dialogue; and
- allows government regulators to have more direct engagement with vendors and new players.

There may be an increased role for ACMA in providing education and information in the future, particularly in emerging areas of internet communications risks and information authenticity.

ACMA could further encourage efficiency in the use of spectrum, including better use of existing allocations, and continue to be responsive to innovative approaches to managing spectrum. Possible approaches include spectrum sharing and increased use of class licensing to reduce regulation and enhance capacity.

In an uncertain future regulatory environment, ACMA needs to develop and maintain new skills and abilities. These include the need to understand the internet architecture and its strengths and weaknesses, which will be critical in designing and managing effective regulatory and self-regulatory policies and programs.

Effective relationship management includes the need to work closely with groups supporting industry regulation, such as ACIF, to ensure they remain relevant to the industry and community they serve. It will also be important to develop relationships with new service providers and relevant virtual communities of interest.

Understanding and responding to uncertainty requires a whole of communications systems thinking approach and continuous monitoring and analysis of what is emerging.

S1

# chapter 2

## 2

### CHAPTER 2: BENEFITS RESULTING FROM CHANGES IN TELECOMMUNICATIONS SERVICES

Key findings	21
Developments in the telecommunications sector in 2004–05	22
<i>Internet</i>	22
<i>Mobile phone services</i>	25
<i>Fixed line developments</i>	25
Estimating benefits from telecommunications services	26
<i>Regional analysis</i>	27
Consumer and small business benefits	27
Impacts on welfare measures	28
<i>Gross domestic product or output</i>	28
<i>Consumer benefits</i>	28
<i>Small business benefits</i>	28
<i>Employment</i>	28
<i>Sector results</i>	28
Regional analysis	29
<i>Impacts on states</i>	29
<i>Impacts on industry</i>	29
<i>Impacts on consumers</i>	30
Summary	31

## CHAPTER 2: BENEFITS RESULTING FROM CHANGES IN TELECOMMUNICATIONS SERVICES

# 2

The former ACA commissioned economic consultants, ACIL Tasman, in association with telecommunications specialists Gibson Quai AAS, to assess the benefits accruing to household and small business consumers during 2004–05 from the improvements achieved in the telecommunication sector since the *Telecommunications Act 1997* reforms. The consultant's report, *Consumer Benefits Resulting from Australia's Telecommunications Sector*, was released by ACMA in November 2005. This chapter provides an overview of the report's findings.

The 1997 reforms opened Australia's telecommunications services sector to competition. This has accelerated productivity improvements in the sector, to the benefit of users of telecommunications services. The benefits have been improvements to service quality, new types of services, quicker introduction of new technology, improved geographical coverage and price reductions.

These attributes increase business productivity in industries that use telecommunications services and benefit residential consumers through time savings from faster internet services and a broader range of online applications. Other factors affecting the telecommunications market are government subsidies, for example, for extension of broadband in regional areas, and regulatory policy.

The consumer and business benefits from telecommunications services result from new technologies, which provide new services or lower costs to users, and competition, which speeds the take-up of new technologies and the pace of price reduction, and the interaction between the two.

The benefits flowing to households and businesses can be quantified using various measures, including gross domestic product (GDP), and levels of household consumption, employment and business profits.

Benefits to economic welfare are measured as the additional production of an economy with price competition and innovation in the telecommunications sector, over and above the productive output of an economy without price competition and innovation in this sector.

### KEY FINDINGS

The consumer benefits report estimated that the Australian economy in 2004–05 grew by around \$2 billion compared with an economy that did not benefit from price and service competition in the telecommunications sector, over and above those effects already embedded in the economy at the end of 2003–04. If added to the estimate of total economic welfare in 2003–04, the estimated changes to economic welfare of the 1997 reforms and subsequent market developments were of the magnitude of \$12.4 billion in 2004–05.

The composition of the total benefits to the Australian economy from changes in the telecommunications services in 2004–05 include:

- household consumption increasing in the order of \$1.3 billion;
- the creation of approximately 23,000 additional jobs;
- increased benefits to small businesses of over \$200 million; and
- investment increasing by almost \$500 million.

These benefits include:

- direct price and service benefits plus the indirect benefits that consumers gain in dealing with others, for example, airlines and banks;
- higher levels of employment in expanding telecommunications-related areas of the economy, such as the electronics industry and regional ADSL deployment;
- increased business profits (or producer surplus) from increased efficiency and lower input costs;
- households gain from faster internet connections and a broader range of online applications from higher bandwidth technology; and
- the reduction in the cost to consumers and businesses of using the internet and most fixed-line and mobile voice services.

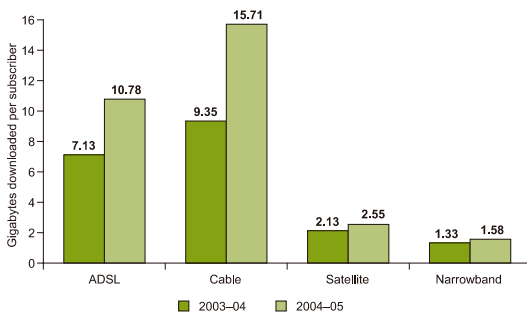
Much of the data used in the modelling of consumer benefits and industry trends in this chapter was drawn from industry responses to the ACA information request, which provided data as of 31 March 2005. Accordingly, some of the statistics in this chapter may vary from those quoted elsewhere in this report, which in most cases relate to the full 2004–05 financial year and to a more complete set of industry responses.

## DEVELOPMENTS IN THE TELECOMMUNICATIONS SECTOR IN 2004–05

### Internet

The most striking development over the year was the growth in the internet service sector. According to the ABS, in the year to 31 March 2005 the number of broadband subscribers grew 108 per cent, narrowband subscribers declined four per cent, and total subscribers rose 15 per cent to nearly six million. According to carrier responses to the ACMA data request, over this period broadband data volumes downloaded increased by more than 230 per cent, narrowband by 22 per cent and total volumes by 158 per cent. Figure 2.1 shows the significant increases in data volumes downloaded per subscriber in 2004–05, especially ADSL and cable subscribers.

Figure 2.1: Volume of data downloaded per internet technology per subscriber, 2003–04 and 2004–05



Data source: Telecommunications carriers' responses to the ACA data request for 2004–05

Note: Data is for 12 months to 31 March for each year

Apart from using more data-intensive online applications, the significant increases in data download volumes were driven by price reductions for internet services, especially broadband services. This is evidenced by declines in average annual revenue per customer of (shown in Figure 2.2):

- 30 per cent for ADSL subscribers;
- 15 per cent for cable subscribers;
- 18 per cent for satellite subscribers; and
- three per cent for narrowband subscribers.

The increased affordability of internet services in 2004–05 is also reflected by substantial price reductions of:

- 54 per cent per Gigabyte for ADSL;
- 49 per cent per Gigabyte for cable;
- 31 per cent per Gigabyte for satellite broadband; and
- 19 per cent per Gigabyte for narrowband.

A key factor behind growth in subscriber numbers, sales revenue and online activity levels was new entry-level wholesale and retail ADSL prices in 2004. The result has been significant price competition in the broadband internet market in 2004–05—the lower rates have encouraged many users to switch from the slower dial-up services, in both residential and business customer sectors.

Subscriber growth in broadband services can also be attributed to increasing ADSL broadband availability, allowing more of the population to benefit from the falling broadband prices for terrestrial and satellite services. As depicted in Table 2.1, national terrestrial broadband availability is estimated to have increased by 6.9 per cent in 2004–05. New South Wales and Victorian residents enjoyed the highest availability, while Tasmanian and Northern Territory residents had the largest increases in availability, having risen from low bases in 2003–04.

Table 2.1: Terrestrial broadband availability per state and percentage increase, 2003–04 to 2004–05

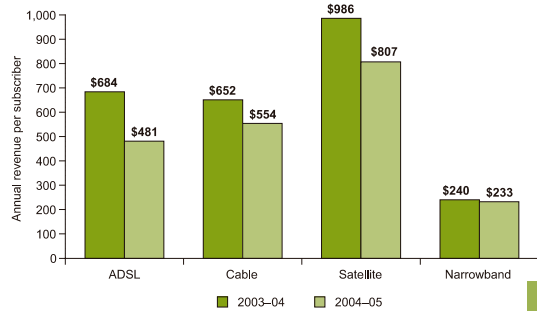
	2003–04 availability	2004–05 availability	% change in availability
New South Wales	75.4%	80.7%	7.0%
Victoria	76.2%	80.9%	6.2%
Queensland	65.4%	69.3%	6.0%
South Australia	58.9%	63.2%	7.2%
Western Australia	66.4%	70.7%	6.5%
Tasmania	51.9%	58.6%	12.8%
Northern Territory	43.6%	49.8%	14.2%
Australia	68.2%	72.9%	6.9%

*Note: Terrestrial broadband refers to ADSL and cable broadband technology. All availability growth in 2004–05 is due to expanding ADSL networks. Figures are percentage of local government area population covered.*

The spread of terrestrial broadband availability at the end of May 2005 is shown in Figure 2.3 Metropolitan areas have higher levels of access to terrestrial broadband services than rural regions, largely explained by differences in population density and businesses' location. Regional areas, particularly towns with populations of 800 to 2,000, gained greatest benefit through increased ADSL broadband availability.

Another source of emerging price competition has been the entry of broadband wireless access service providers in metropolitan and regional areas.

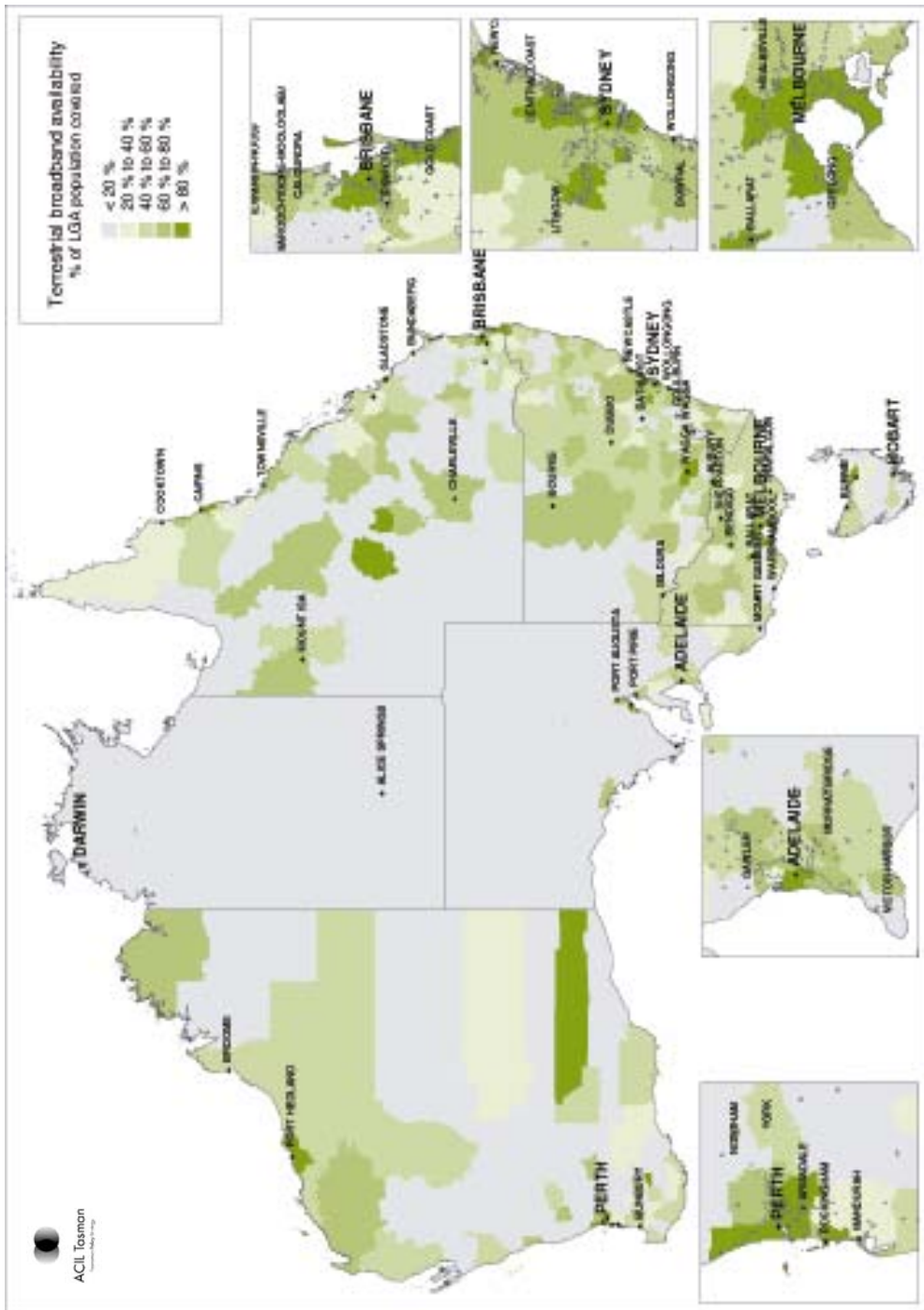
Figure 2.2: Average revenue per subscriber per internet technology type, 2003–04 and 2004–05



*Data source: Telecommunications carriers' responses to the ACA data request for 2004–05*

*Note: Data is for 12 months to 31 March for each year*

Figure 2.3: Terrestrial broadband availability by local government area, May 2005



*Note: Terrestrial broadband refers to ADSL and cable broadband technology. All availability growth in 2004–05 is due to expanding ADSL networks  
Data source: Map info/Exchange info, Telstra wholesale broadband coverage statistics and 2001 ABS census data*



## Mobile phone services

The mobile phone market continued to expand in 2004–05, while offering slightly lower per minute call charges (although this varied across customer segments).

According to responses to the ACA data request, the number of mobile retail subscribers increased to almost 17 million (of which 13.5 million were residential) or approximately 85 per cent of Australia's population by March 2005. Numbers of pre-paid residential customers grew by 16 per cent, post-paid residential customers by five per cent and business customers by nearly 16 per cent. There were 8.5 million pre-paid residential customers, more than five million post-paid residential customers and 3.4 million business customers by March 2005.

In 2004–05, total call minutes increased by 12 per cent and, while the average price decreased by two per cent per call, the decrease was only evident in the residential pre-paid and business sectors.

The price per minute for:

- pre-paid residential services decreased by 1.4 per cent;
- post-paid residential services increased by 7.2 per cent; and
- business services decreased by 8.8 per cent.

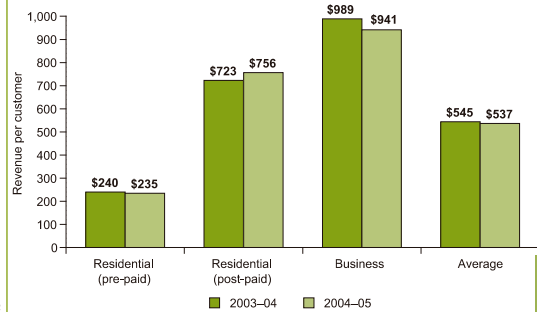
The introduction of capped pricing plans appears to have been a significant factor in the continuing strong growth of mobile voice services. The increase in pre-paid residential and business customers appears to be influenced by more aggressive pricing strategies such as capped plans, especially in the business sector. Figure 2.4 shows the reductions in average annual revenue per customer for pre-paid residential and business customers and the increase in annual revenue per customer for post-paid residential customers in 2004–05.

## Fixed line developments

Revenues, the number of fixed-line subscribers and call volumes declined in 2004–05. Subscriber numbers decreased two per cent (residential) and four per cent (business). Access revenue increased, but there was a 14 per cent decrease in total local call revenue, an eight per cent decrease in the number of local calls and an 11 per cent decrease in local call minutes. There were somewhat lower decreases for long-distance and international calls. The changes in revenue for fixed-line services are depicted in Figure 2.5.

Continuing declines in call revenue for fixed-line services appear to be primarily due to customer preferences (non-price product substitution such as convenience and flexibility) and increasing access charges causing a substitution of fixed for mobile services. While the largest migration appears to be to mobile services, the continuing high growth in broadband internet services suggests that email, internet messaging and chat rooms are also being used as alternative means of communication.

Figure 2.4: Changes in average annual revenue per customer by customer type, 2003–04 and 2004–05

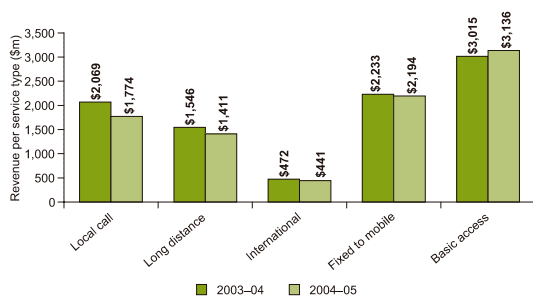


Data source: Telecommunications carriers' responses to the ACA data request for 2004–05

Note: Data is for 12 months to 31 March for each year

2

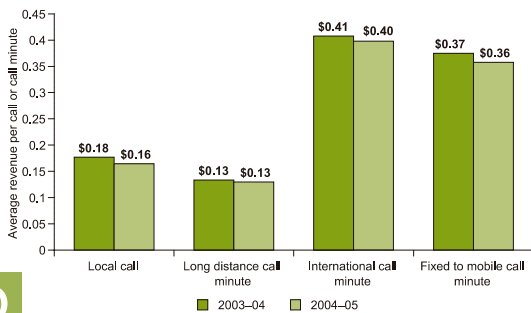
Figure 2.5: Fixed-line revenue by service type, 2003–04 and 2004–05



Data source: Telecommunications carriers' responses to the ACA data request for 2004–05

Note: Data is for 12 months to 31 March for each year

Figure 2.6: Fixed-line revenue per call minute by service type, 2003–04 and 2004–05



*Data source: Telecommunications carriers' responses to the ACA data request for 2004–05*  
*Note: Data is for 12 months to 31 March for each year*

There have been price reductions for all sectors of the fixed-line market except basic access, due to a combination of downward pressure from access price regulation and some price competition. These discernable price trends for fixed-line services are evident in Figure 2.6.

## ESTIMATING BENEFITS FROM TELECOMMUNICATIONS SERVICES

The analysis for 2004–05 applied a computable general equilibrium methodology of the same general type as in previous reports, supplemented by detailed regional analysis and extended qualitative and market analysis.

Tasman-Global Telco, a dynamic general equilibrium model, uses a 'technology bundle' to represent in greater detail developments in the telecommunications sector. The model accounts for all sectors of the economy and captures both direct and indirect effects, for example, the effect of telecommunications changes on industries that in turn service residential consumers. It quantifies the apparent economic benefits achieved through developments in the telecommunications services sector in the past year.

Through consideration of the process and results, as well as the results of the previous economic modelling undertaken on this issue, it is possible to estimate the effect of the 1997 reforms and subsequent market developments on the Australian economy.

ACIL Tasman estimated the benefits to consumers and businesses by assessing changes to the following five broad telecommunications service types:

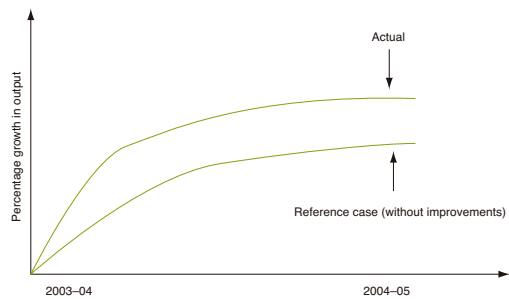
- local calls (local calls from fixed-line and mobile services);
- non-local calls (long distance and international calls from fixed-line and mobile services);
- mobile data (short message service, multimedia message service);
- internet data (narrowband and broadband); and
- other data (comprising fixed network and ISDN data).

The key data sources informing this research are the ABS, previous reports by the former ACA and data from telecommunications carriers.

The Tasman-Global Telco model compared the actual developments in the telecommunications sector in 2004–05 with the 2003–04 'reference case' (if the 1997 reforms had no additional effects on competition and innovation over and above those effects already embedded in the economy at the end of 2003–04). The reference case moves broadly in line with changes in output observed across the rest of the economy. The actual and reference case paths of the economy are depicted in Figure 2.7.

This reference case assumption reflects a balance between the fact that telecommunications is a technology-driven industry, and that before 1997 the telecommunications sector had less competition, with natural monopoly network elements, than is typical in the rest of the economy. A less competitive industry is likely to grow more slowly because of lower pressure for rollout of new technologies and price reductions. The assumption of GDP growth similar to the rest of the economy has been adopted. Sensitivity analysis is used to test the sensitivity of the assumption of ubiquitous GDP growth.

Figure 2.7: Actual versus reference case, 2003–04 to 2004–05



## Regional analysis

The regional analysis draws on detailed, sub-state data from the telecommunications carriers. It also uses several different types of spatial data from various sources, including databases on demographics, industrial structure, business numbers, employment and telecommunications availability, which is especially relevant to terrestrial broadband.

Much of the regional data aggregation, modelling and analysis in the ACIL Tasman report were performed in a geographical information systems (GIS) environment. As well as being used for managing data inputs and informing inputs into the Tasman-Global Telco model, GIS was also used to analyse, disaggregate and display the model output results. Regional analysis mapping techniques, together with two-way interaction with the Tasman-Global modelling, were used to provide a breakdown of benefits for each region by industry.

## CONSUMER AND SMALL BUSINESS BENEFITS

The change in consumer benefits was estimated on the basis of consumer surplus, which is defined as the difference between the value consumers place on a service or their willingness to pay (at a given level of supply) minus the price actually paid for the service.

The direct consumer benefits from improvements in the telecommunications sector include price reductions, increased use associated in part with price reductions, time savings from faster internet services, improvements in quality, and new services. These changes are a result of improved productivity in the telecommunications industry as well as strategic price changes introduced by the major telecommunications providers. The indirect benefits captured by Tasman-Global Telco include households benefiting by purchasing cheaper products from industries that have become more productive as a result of cheaper and more efficient telecommunications services.

Telecommunications services are essential inputs into the operations of nearly all Australian businesses. To estimate benefits to businesses, an estimate of producer surplus is calculated. Producer surplus is the difference between the cost of production and the price received for a unit of service. Therefore telecommunications developments leading to cheaper or more efficient telecommunications inputs increase productivity and reduce input costs; thus increasing producer surplus, which approximates business profits.

## IMPACTS ON WELFARE MEASURES

### Gross domestic product or output

The effect of the performance of the telecommunications sector is that the Australian economy is estimated to have grown during 2004–05 by around \$1.97 billion more than it would have in the reference case. As with all such estimates, this is dependent on the ‘reference case’ assumptions and other model assumptions stated in the main report and appendixes, and should be seen as indicative rather than a precise figure.

Combined with the aggregate GDP estimate of \$10.4 billion by the end of 2003–04, ACIL Tasman estimated that economy-wide benefits from telecommunications reforms and subsequent market developments are around \$12.4 billion in 2004–05.

2

As in previous years, this estimate is sensitive to the judgment made in defining how an economy would have progressed without the telecommunications sector being opened up to competition. If it is assumed in the reference case that the telecommunications sector would have grown slower than the economy as a whole, the gap between it and the actual scenario increases, producing a larger estimate of telecommunications benefits. Conversely, a reference case with higher output growth than the remainder of the economy, which would bring it closer to the actual scenario, would imply a lower estimate of telecommunications benefits.

### Consumer benefits

The Tasman-Global Telco model estimates that consumer benefits, as measured by real household consumption, increased by 0.24 per cent or \$1.3 billion relative to the reference case in 2004–05, as a result of the changes in the telecommunications services sector.

### Small business benefits

The model estimates that, in 2004–05, the changes in the telecommunications services sector led to gross operating surpluses increasing by 0.25 per cent relative to the reference case, with net benefits to small businesses increasing by \$216 million.

### Employment

In 2004–05, the changes in the telecommunications services sector are estimated to have increased employment by 0.24 per cent relative to the reference case. This is equivalent to the creation of 23,280 additional jobs in the Australian economy in the period July 2004 to June 2005 than there would have been without the changes.

### Sector results

Nearly all economic sectors in all jurisdictions showed increases in output compared with the reference case. The increases are especially pronounced in sectors known to make substantial use of telecommunications, such as many of the service sectors. Manufacturing industries also performed well as a result of the flow-on or indirect economic effects, especially the electronics industry, reflecting its importance as a supplier of inputs to the communications industry.

## REGIONAL ANALYSIS

### Impacts on states

The estimated benefits from changes in the telecommunications services sector range from a 0.14 per cent increase (Northern Territory) to a 0.27 per cent (New South Wales) increase in gross state product (GSP) in 2004–05. The percentage increases in household consumption, employment and investment are comparable to GSP changes in each state (with the number varying somewhat by jurisdiction). The numbers shown in Table 2.2 are substantial compared with overall growth in the national economy (GDP) of 2–3 per cent per annum in 2004–05.

Table 2.2: Estimated benefits of telecommunications changes – percentage increase, 2003–04 to 2004–05

	GSP	Household consumption	Employment	Investment
New South Wales	0.27	0.31	0.31	0.27
Victoria	0.26	0.30	0.30	0.26
Queensland	0.19	0.23	0.23	0.19
South Australia	0.25	0.30	0.29	0.25
Western Australia	0.21	0.26	0.25	0.21
Tasmania	0.23	0.28	0.27	0.23
Northern Territory	0.14	0.18	0.17	0.14
Australia	0.24	0.28	0.28	0.24

Table 2.2 shows that states such as New South Wales and Victoria with strong service and manufacturing sectors gain greatest benefit from telecommunications changes as measured by GSP increases. Residents in those states also have the highest terrestrial broadband availability (approximately 81 per cent), which is higher than the other states and the national average of 73 per cent. South Australia, the only other state to perform better than the national average, has a relatively strong manufacturing sector and also benefited from a strong increase in terrestrial broadband availability.

The states benefiting less from changes to telecommunications services were generally more reliant on agriculture and mining industries, and had lower terrestrial broadband availability. Despite being relatively high users of telecommunications services, the West Australian and Queensland economies only receive moderate benefits as a result of relatively slow increases in broadband availability and because of the composition of their economies, which have substantial mining and agriculture sectors. The model estimates that residents of the Northern Territory benefited least from telecommunications services because of low (but rising) terrestrial broadband availability.

### Impacts on industry

The regional analysis concludes that areas with a predominance of economic activities that are relatively heavy users of telecommunications services—services and manufacturing sectors—received greater benefit from changes in telecommunications services, including price reductions. These are more typically found in metropolitan areas. The opposite applies to areas where less intensive users of telecommunications services dominate—agriculture, fisheries, forestry and coal—industries that the modelling showed to be less sensitive to developments in the telecommunications industry. Typically, these areas are the rural and regional areas.

2

## Impacts on consumers

During 2004–05, metropolitan areas also had higher terrestrial broadband (most notably ADSL and cable) availability, meaning that a greater proportion of the households and businesses were in a position to benefit from the broadband price reductions that occurred during the period.

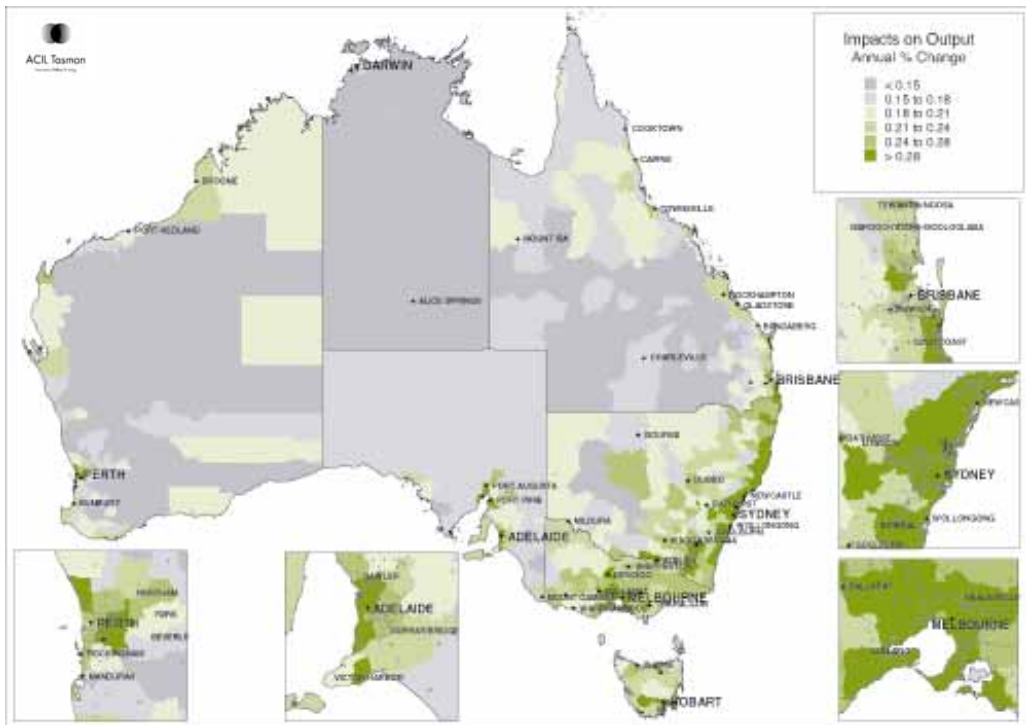
Regional areas benefited more from increasing broadband availability. The areas benefiting most from the increase in terrestrial broadband availability typically contained towns with populations of between 800 and 2,000 people. Substitution effects were a feature of the modelling, with increases in broadband coverage being associated with lower narrowband and satellite use.

Figure 2.8 shows the geographic spread of telecommunications-related output increases in 2004–05.

2

Areas with high population density had the highest per capita use of fixed-line voice services. A further clear trend in the regional data was the dependency on local calls in metropolitan areas, and a higher dependency on long distance calls in the least densely populated areas. In a modelling context, this made the metropolitan areas more sensitive to changes in local calls (the number of which grew slightly), while the rural and regional areas were more sensitive to changes in long distance calls (which were found to decline slightly). Inner metropolitan areas had the highest use of mobile services, followed closely by rural areas (where mobile calls are often an alternative to a long distance call), with outer metropolitan areas having the lowest use.

Figure 2.8: Impacts on local government area output from changes in the telecommunications sector, 2004–05



*Note: Terrestrial broadband refers to ADSL and cable broadband technology. All availability growth in 2004–05 is due to expanding ADSL networks.*

*Data source: Map info/Exchange info, Telstra wholesale broadband coverage statistics and 2001 ABS census data*

## SUMMARY

The telecommunications sector continues to experience rapid technological change, spurred on by technological developments and increased competition due to the 1997 reforms. The technological changes are leading to new types of service and lower costs, whose benefits are supplemented by increasing geographical spread.

The most striking development in 2004–05 was the increase in the number of broadband subscribers and the amount of internet activity, as a result of price cuts that stimulated customer growth of ADSL broadband. The year also saw switching from narrowband to broadband services, and the increasing regional availability of ADSL broadband.

The mobile sector also grew strongly and average prices declined slightly. Traditional fixed-line services suffered from substitution effects towards mobile services, and declining revenues and network utilisation.

The net benefit to the economy was substantial, and was experienced across many regions and industries.

2

# chapter 3

## CHAPTER 3: CONSUMER ISSUES

### 3

Overview	33
Unfair terms in consumer contracts	34
<i>Development of the Consumer Contracts Code</i>	34
<i>Review of the Telecommunications (Standard Form of Agreement Information) Determination 2003</i>	35
<i>'Best practice' contract</i>	36
Consumer Driven Communications project	36
Financial hardship and telecommunications	37
<i>Reducing hardship</i>	37
<i>Telstra's Low Income Measures Assessment Committee</i>	37
<i>Review of industry credit management practices</i>	38
<i>ACIF's credit management code</i>	41
Privacy and the protection of personal information	41
<i>Complaints</i>	41
<i>Proposed IPND standard</i>	41
<i>Review of the Privacy Act</i>	42
<i>Technological developments</i>	42
Consumer complaints	42
<i>Telecommunications Industry Ombudsman complaints</i>	43
<i>Internet dumping</i>	45
<i>Telephone Information Services Standards Council complaints</i>	47
<i>Australian Competition and Consumer Commission complaints</i>	48
<i>Telephone sex services</i>	49
Accessible telecommunications for people with disabilities	51
<i>The National Relay Service</i>	51
<i>Disability equipment programs</i>	54



## CHAPTER 3: CONSUMER ISSUES

# 3

This chapter discusses issues of importance to consumers and consumer trends during 2004–05, with a particular focus on:

- developments with consumer safeguards through self-regulation, particularly in the areas of contracts and credit management;
- privacy and the protection of personal information;
- actions to reduce financial hardship for consumers;
- consumer complaints; and
- accessible telecommunications for people with disabilities.

### OVERVIEW

The 2004–05 year has seen a significant attitudinal shift in the interaction between consumer representatives and the telecommunications industry.

Consumer representatives involved in regulatory, co-regulatory and self-regulatory processes have traditionally faced the dilemma of trying to represent ‘all consumers’, which is a challenging task given the diverse range of consumer views and in particular the views of special interest groups. Developments during 2004–05 enabled a different approach by consumer representatives and advocates.

For the first time in the development of a telecommunications consumer code, there was equal consumer and industry representation in the development by the Australian Communications Industry Forum (ACIF) of the *Industry Code ACIF C620:2005 Consumer Contracts* (the ‘Consumer Contracts Code’), which was registered by the ACA in May 2005. This meant that both industry and consumer representatives formed coalitions to facilitate harmonised input to the code development process.

The practice of equal consumer and industry representation has also been adopted in the revision of the *Industry Code ACIF C541:April 2003 Credit Management* (the ‘Credit Management Code’), scheduled to be revised by the end of 2005. This development constitutes a welcome change from past practices, where consumer representation was much smaller proportionally than that of industry.

Consumer representation was also the focus of the ACA-sponsored project *Consumer Driven Communications* (discussed in this chapter). This project brought consumer representatives and advocates together, with a key consideration being the most effective means of representing consumer interests in the context of telecommunications regulatory structures and activities.

While this project produced many useful recommendations, it has also provided impetus to the formation of an ongoing consumer coalition. While this coalition—as with any—cannot claim to have or represent a single consumer view, it has enabled consumer representatives to jointly consider their views on a number of important legislative and regulatory issues and to propose strategies to address consumer interests.

During 2004–05, consumer representatives have been able to achieve a degree of attitudinal and process change in how they interact with industry and government. ACMA believes that regulatory processes of all kinds benefit from balanced debate, which requires a strong and effective consumer voice.

## UNFAIR TERMS IN CONSUMER CONTRACTS

### Development of the Consumer Contracts Code

A considerable achievement during 2004–05 that advanced the interests of telecommunications consumers was the development by ACIF of the Consumer Contracts Code. This section describes the background to the development of this code, including its antecedents.

3

The existence of unfair terms in consumer contracts has been long recognised in various industries and countries. This problem was highlighted more than a decade ago by the European Union (EU), which issued a directive, *Unfair Terms in Consumer Contracts* (the EU Directive), to address this problem on 5 April 1993. In particular, the EU Directive required contract terms to be drafted in plain, intelligible language and, where there are different views about the meaning of a term, the interpretation most favourable to the consumer should prevail.

The EU Directive recognised that an imbalance detrimental to the consumer often exists in contractual arrangements for the supply of goods and services. The potential for imbalance is most evident in standard form contracts—such as the standard forms of agreement (SFOAs) used by many CSPs in Australia—compared with individually negotiated contracts. The EU Directive highlighted commonly-used terms that might be unfair in consumer contracts:

- inappropriately excluding or limiting the legal rights of the consumer;
- automatically extending the duration of a fixed-term contract;
- obliging the consumer to meet all of the contract’s obligations, but not meeting all of its own; and
- unilaterally varying a contract without a valid reason.

In Australia, the Victorian Government amended its *Fair Trading Act 1999* about unfair terms in consumer contracts. The changes are modelled on the requirements of the EU Directive. The Victorian legislation came into effect on 7 October 2003.

In 2001, a report entitled *Unfair Practices and Telecommunications Consumers*, released by the Communications Law Centre (CLC), drew attention to concerns about the nature of consumer contracts commonly in use in the telecommunications sector in Australia, concluding that consumers might be at risk of entering into contracts containing potentially unfair terms. The widespread use of SFOAs was cited as evidence of the relationship imbalance between suppliers and consumers of telecommunications services.

In response to the issues raised by the CLC report, ACIF develop an industry guideline designed to prevent the use of unfair terms in consumer contracts, including the presentation and intelligibility of consumer contracts. The EU Directive was a key document influencing the content and structure of the guideline.

The industry guideline, *ACIF:G601 Industry Guideline Consumer Contracts*, was completed in December 2002. Compliance with the provisions of the industry guideline was voluntary and its provisions could not be enforced by the ACA.

The ACA undertook two reviews during 2003 of the influence of the guideline in improving the contractual environment for consumers. In May 2003, the CLC updated its 2001 report with a new report, *Report on Fair Terms in Telecommunications Consumer Contracts 2003*. In October 2003, the CLC provided the ACA with a comprehensive review of industry compliance with the guideline entitled *Telecommunications Consumer Contracts: Compliance with the ACIF Consumer Contracts Industry Guideline*.

Inadequate industry compliance with the guideline and the lack of apparent improvement in consumer contracts led the ACA to request under section 118 of the *Telecommunications Act 1997* that ACIF develop a Consumer Contracts Code.

The code was registered on 4 May 2005, with the requirements of the code becoming enforceable on 4 November 2005.

The Consumer Contracts Code established a general principle that a term in a contract must not be unfair and that a term in a contract is to be regarded as unfair if, contrary to the requirements of good faith and in all the circumstances, it causes a significant imbalance in the parties' rights and obligations arising under the contract to the detriment of the consumer.

The specific requirements of the code, which in many instances represent a significant change from previous contractual terms and conditions in use in the telecommunications industry, include:

- ensuring that exclusion clauses do not exclude or limit the liability of the supplier in a manner that is contrary to law or in a manner that is not clearly expressed or misleads the consumer as to their rights at law;
- preventing the supplier requiring the consumer to pay a reconnection fee for suspension events caused by the supplier's error or failure to perform its obligations under the contract;
- preventing the supplier from excluding the governing law of the state or territory in Australia in which the consumer ordinarily resides or the jurisdiction of the courts in that state or territory; and
- requiring suppliers to give a notice in writing 21 days before varying a fixed period contract and offering the consumer the right to terminate the contract, subject to some agreed exceptions.

The code also recognises that there are circumstances, often outside of the control of suppliers, in which they may need to reserve the right to take certain forms of action, such as suspending or restricting the supply of a service in cases of emergency or permitting the supplier to suspend, intercept or terminate a service in order to comply with a warrant or other court order.

### **Review of the Telecommunications (Standard Form of Agreement Information) Determination 2003**

Following the ACA registration of the Consumer Contracts Code, ACMA is reviewing the notice requirements under the *Telecommunications (Standard Form of Agreement Information) Determination 2003* (the SFOA Determination).

Amendments were made to Part 23 of the *Telecommunications Act 1997* in 1999 to strengthen consumer safeguards by improving the level of information that providers who use SFOAs must disclose to their customers. Specifically, section 480A(2) of the Telecommunications Act requires the ACA to make a determination to increase consumer safeguards in relation to the use of SFOAs, which will impose any or all of the following requirements on providers who use SFOAs:

- give ordinary customers specified information relating to the supply of designated goods or services;
- give specified kinds of ordinary customers specified information about the supply of designated goods or services; or
- publish information relating to the supply of designated goods or services.

The ACA has made two SFOA determinations under section 480A(2) of the Telecommunications Act, the first in 1999 and the second in 2003. They each cover two specific issues: the preparation of a summary of the terms and conditions of an SFOA, and requirements for the summary to be made available to customers; and rules relating to notice being given to customers of detrimental variations to their contracts. The current review of the SFOA determination is confined to clauses dealing with the notice requirements for detrimental variations, and was precipitated by enhanced notice requirements for consumers with fixed period contracts having been included in the Consumer Contracts Code.

Consultation is continuing with a range of stakeholders representing suppliers, consumers and other regulators on a revised SFOA determination, taking into account the enhanced protections offered by the Consumer Contracts Code.

### 'Best practice' contract

The ACA, in conjunction with the CLC, developed a 'best practice' consumer contract, which is on the ACMA website at [www.acma.gov.au](http://www.acma.gov.au). This work complements the work of industry in developing the Consumer Contracts Code. The best practice pro-forma contract provides guidance for industry participants and consumers on constructing standard form consumer contracts for the provision of telecommunications services. It presents a streamlined and practical approach to the development of these contracts.

3

## CONSUMER DRIVEN COMMUNICATIONS PROJECT

In the second half of 2004, the ACA funded and provided administrative support to the Consumer Driven Communications project, to allow consumer representatives to consult with their constituencies about improving consumer input to telecommunications regulation.

The ACA's action responded to continuing dissatisfaction among consumer representatives about their influence and input into the self-regulatory processes of telecommunications regulation. This dissatisfaction had been articulated as criticism of the self-regulatory concept, the regulator or the level of consumer protection provided in the industry codes developed by ACIF.

The project provided an opportunity for consumer representatives to discuss and reflect on their involvement in telecommunications since competition and self-regulation were introduced in 1997. The project was received enthusiastically by the consumer representatives and resulted in many recommendations for ACMA, DCITA and other organisations to consider in the advancement and governance of the current regulatory regime.

The consumer organisations represented in the Consumer Driven Communications project were:

- Consumers' Telecommunications Network;
- Australian Consumers' Association;
- Legal Aid Queensland, in association with the Consumers' Federation of Australia;
- Small Enterprise Telecommunications Centre;
- Telecommunications and Disability Consumer Representation;
- Communications Law Centre; and
- representatives of other community sectors—the Council on the Ageing and National Seniors.

During the period June to December 2004, this group produced a public issues paper and undertook broad consultation on the options presented in the paper. A final detailed report, *Consumer Driven Communications: Strategies for Better Representation*, with 71 recommendations, was issued in December 2004.

The report's recommendations were directed at major stakeholders in telecommunications regulation, including the Minister, DCITA, the Australian Competition and Consumer Commission (ACCC), industry bodies such as ACIF, the Internet Industry Association and the Telephone Information Services Standards Council (TISSC); carriers and CSPs; the Human Rights and Equal Opportunity Commission (HREOC); the TIO; the Office of the Federal Privacy Commissioner (OFPC); and state and territory consumer affairs agencies. ACMA understands that the consumer representatives involved in the Consumer Driven Communications project have approached these organisations to discuss the specific recommendations concerning them.

The central issues underlying the recommendations included the importance of:

- a visible regulatory presence;
- transparent regulatory processes with opportunities for active consumer participation;
- the provision of effective consumer information;
- resources for consumer representation; and
- research into telecommunications issues.

3

## FINANCIAL HARDSHIP AND TELECOMMUNICATIONS

### Reducing hardship

During 2003 to 2005, the ACA worked with the telecommunications industry to establish principles for dealing with consumers experiencing financial hardship.

This work was initiated after the ACA became aware of work being conducted in other industries with welfare agencies to establish systems to identify customers in hardship and resolve credit and debt issues.

Six major telecommunications providers—AAPT, Hutchison, Optus, Primus, Telstra and Vodafone—participated in this process. Agreed outcomes were:

- to enhance the provision of information to consumers;
- to identify and work with consumers suffering hardship; and
- to develop stronger links between industry, financial counsellors and welfare agencies.

The approach adopted by ACMA and the industry emphasises learning from the experiences and approaches used in comparable industries to recognise the importance of identifying customers in hardship. It also recognises that financial counsellors, welfare services, regulators, industry and their agents all spend large amounts of time dealing with telecommunications debt issues.

To assist this process, in April 2005 the ACA released a consumer fact sheet, *Telecommunications service options if you are experiencing financial hardship*, which provides information to consumers about managing their telecommunications budget and steps they can take if financial hardship is experienced.

### Telstra's Low Income Measures Assessment Committee

Telstra has an obligation under clause 22 of the *Carrier Licence Conditions (Telstra Corporation Limited) Declaration 1997* to establish and maintain a Low-Income Measures Assessment Committee (LIMAC). LIMAC consists of representatives of welfare organisations and reports on the effectiveness of Telstra's package of measures in meeting the needs of low-income consumers. ACMA participates in the committee as an observer.

LIMAC primarily assesses the effectiveness of Telstra's Access for Everyone package. The package targets low-income consumers in the following segments:

- age pensioners;
- Indigenous Australians;
- low-income families;
- people from non-English-speaking backgrounds;
- people with disabilities;
- transient and homeless people; and
- unemployed persons.

LIMAC is required to produce an annual report to the Minister for Communications, Information Technology and the Arts on the effectiveness of the Access for Everyone package and its marketing by Telstra. The 2004 report was submitted in March 2005.

3

As part of its reporting process, LIMAC commissions research into the communications and information needs of disadvantaged communities to inform the content and marketing of the Access for Everyone package.

During 2004–05, LIMAC's research focused on Indigenous and homeless consumers to monitor the effectiveness of the increased focus on these two segments. Some key points raised by the research were:

- all 377 respondents had access to either personal or community telecommunications services;
- there was a reduced incidence of reports of no access to personal telecommunications services compared to June 2003;
- mobile telephones are playing an increasingly important role for homeless and Indigenous people in metropolitan and regional areas, particularly in the search for employment and in contacting support agencies and family; and
- overall, awareness of the low income initiatives tends to be driven by 'word of mouth' from friends.

In its 2004 report to the Minister, LIMAC endorsed Telstra's strategy of targeted communications through grass roots community agencies and welfare organisations. This strategy appears to have been effective for homeless and Indigenous Australians during 2004–05, with research demonstrating that 'word of mouth' is the most effective means of raising awareness among these targeted groups.

### Review of industry credit management practices

The Minister issued a direction to the ACA on 13 April 2004 instructing the ACA to:

- develop two service provider determinations requiring CSPs to provide information to their customers about the risks associated with using premium services and the actions those customers can take to lessen the risk of unexpectedly high bills for those services;
- investigate and report to the Minister on actions taken by CSPs, either individually or through ACIF or other industry bodies, to address internet dumping involving the use of geographic numbers or international numbers; and
- consider the credit management measures that the telecommunications industry has in place or is developing to address the problem of unexpected high bills for carriage or content services, the adequacy of these measures, and the possible need for regulatory action to ensure an appropriate response to the problem.

During 2004, the ACA conducted an investigation into the credit management practices of the telecommunications industry and made recommendations to the Minister in October 2004 in its report, *Preventing Unexpected High Bills: Credit Management in Telecommunications*. The report concluded that there were serious deficiencies in credit management practices across the sector, evidenced by increasing numbers of complaints to the TIO related to credit management and by a rising level of credit defaults notified by CSPs and ISPs to credit bureaus.

In the period since the preparation of the report, complaints to the TIO related to credit control matters (comprising complaints about barring of services, debt recovery, disconnection, customer over-commitment and payment arrangements) continued to increase.

As shown in Figure 3.1, in 2004–05 the total number of TIO credit control complaints increased by more than 25 per cent compared with the previous year. Most of this increase comprised complaints about mobile services, which increased by more than 59 per cent in 2004–05 compared with 2003–04. There was a relatively smaller increase of around 28 per cent in complaints about internet access services, although this increase was from a low base. There was an increase in complaints for fixed services in 2004–05 of around four per cent.

The rise in levels of credit control complaints reflects, to some extent, the general rise in the overall number of services provided (comprising increased mobile and internet services but decreased fixed services). However, the levels of complaints have also risen in real terms for all three categories of services, with the greatest real rise in complaint levels being for mobile services.

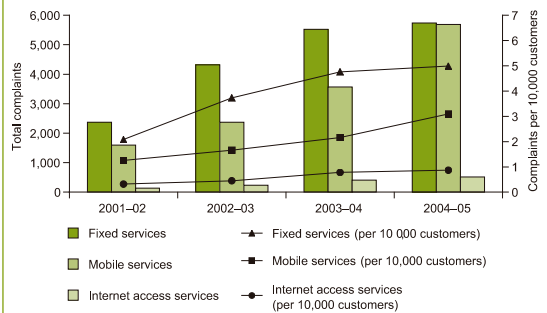
Data on complaints in the financial services sector was obtained from the Banking and Financial Services Ombudsman (BFSO). ACMA considers the financial services and telecommunications sectors broadly comparable given both have a focus on mass market services, have a similar magnitude of accounts or services and there is some convergence between the sectors with the advent of m-commerce. Comparison of complaints data from the BFSO and the TIO indicates that while credit control complaints show an increasing trend in the telecommunications sector over the period 2001–02 to 2004–05, they have fallen over the same period in the financial services sector.

The other indicator of deficiencies in credit management practices relied on in the ACA’s report was the level of credit defaults notified by CSPs and ISPs to credit bureaus. Levels of credit defaults are an important indicator because of the impact that a credit default listing has on affected consumers, through restricting their access to credit for five to seven years.

In 2004–05, the number of credit default listings made by CSPs and ISPs with Baycorp Advantage—the largest credit bureau operating in Australia—was 594,716. This figure represents an increase of more than 63 per cent on 2003–04 and an increase of 18 per cent on the last peak in defaults in 2002–03 (Figure 3.2).

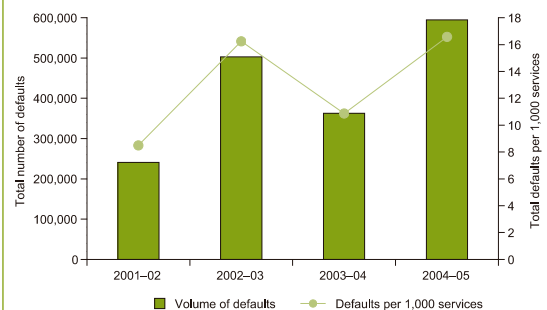
3

Figure 3.1: Credit control complaints received by the TIO by category of service, 2001–02 to 2004–05



Source: Telecommunications Industry Ombudsman

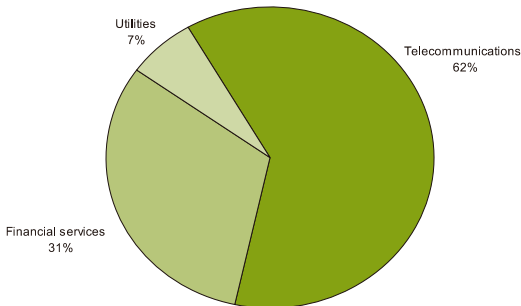
Figure 3.2: Total CSP and ISP default listings and defaults per 1,000 services, 2001–02 to 2004–05



Source: Baycorp Advantage



Figure 3.3: Non-business default listings by general sector, 2004–05

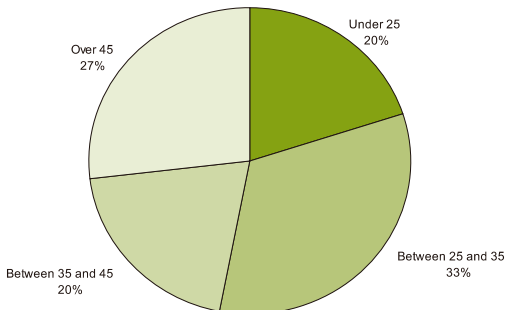


3

Source: Baycorp Advantage

In total, CSPs and ISPs have been responsible for more than 1.7 million credit defaults listed with Baycorp Advantage in the last four financial years. Defaults per 1,000 services (mobile, fixed or internet accounts) have grown from 8.49 in 2001–02 to a high point of 16.58 in 2004–05. This corresponds closely to the trend in the volume of defaults.

Figure 3.4: Default listings made by CSPs and ISPs by age group, 2004–05



Source: Baycorp Advantage

There is clearly some volatility in the level of default listings over the past four financial years, and it is uncertain whether this reflects an economy-wide phenomenon. However, credit defaults listed by CSPs and ISPs with Baycorp Advantage have continued to increase as a proportion of the total economy-wide default listings over the last four financial years—even when total defaults fell in 2003–04.

In the last financial year, the telecommunications sector was responsible for twice the number of defaults of the financial services sector (Figure 3.3). If credit defaults relating to breaches of the credit code, such as changing address without notification, are added, the proportion of credit defaults listed corresponding to the telecommunications sector would be nearly 66 per cent of all non-business default listings.

Figures for the number of defaults per 1,000 services take into account the gradual rise in total services from around 28.34 million in 2001–02 to around 35.86 million in 2004–05. However, a significant proportion of the total services (such as pre-paid mobile phone and unlimited usage fixed price internet plans) are unlikely to result in credit defaults. Therefore the real level of credit defaults per 1,000 services (if accounting for services with little or no risk of credit default) would be somewhat higher.

A breakdown of defaults by age group shows that more than half of the 2004–05 defaults relate to customers under the age of 35 (Figure 3.4). This concentration of defaults may well have implications beyond the telecommunications sector. This is because such defaults are effective for at least five years and may block or restrict access by affected customers to all credit products during that period.



### ACIF's credit management code

The Credit Management Code, registered by the ACA in July 2003, provides the framework for credit management in the telecommunications industry. As discussed in the preceding section, there is continuing evidence that credit management practices in the telecommunications sector may be out of step with those in other sectors. Based on this evidence, ACMA is concerned that this code is not operating effectively and that the current rules may not be sufficient.

ACIF began a review of the Credit Management Code in April 2005. The review will look at how the code is operating and whether additional rules are required. It is expected that a revised code will be submitted for registration by the end of 2005.

## PRIVACY AND THE PROTECTION OF PERSONAL INFORMATION

### Complaints

Concern about privacy and the lawful use and disclosure of telecommunications customers' personal information was a key theme in consumer complaints received by the ACA in 2004–05 and complaints received by the OFPC and the TIO. Complaints related to unwanted telemarketing calls, disclosure of silent line information, unauthorised credit checks and unlawful methods to find and identify individuals were particularly prominent.

The amendments to the *Privacy Act 1988* that extended its coverage to the private sector came into effect in December 2001. From then until January 2005, there were 223 telecommunications complaints dealt with by the OFPC. This number may seem small in comparison with other jurisdictions, but these are written complaints and not simply expressions of dissatisfaction made by telephone. Telecommunications is the third most complained-about sector, behind the finance and health sectors, and nine per cent of complaints to the OFPC relate to telecommunications matters. Of these, 55 per cent concerned the use and disclosure of personal information.

The TIO reported 2,718 complaints directly concerning privacy matters in 2004–05, more than double the 1,271 complaints reported in the previous year. Disclosure of silent numbers and pestering by telemarketers were the most frequently recorded complaints.

In response to privacy concerns, many consumers are seeking ways to restrict access to their telephone services by not making their telephone numbers available in print and electronic public number directories (and similarly not available for disclosure by directory assistance services). Records in the Integrated Public Number Database (IPND) for residential customers show that, at 30 June 2005, 21 per cent are unlisted telephone numbers.

During 2004–05, the ACA also investigated complaints about whether data was unlawfully sourced from the IPND. As discussed in more detail in Chapter 10, the IPND is an industry-wide database of all listed and unlisted public telephone numbers and associated data such as names, addresses and service providers. The IPND can only be accessed for approved purposes, such as to assist police and emergency services, or for producing public telephone number directories.

### Proposed IPND standard

In November 2003, the ACA decided to determine an industry standard under section 125 of the *Telecommunications Act 1997*, to regulate the use of telecommunications customer information. The two major concerns that led to this decision were:

- that organisations were using customer information for purposes beyond those specified or contemplated within Part 13 of the Telecommunications Act; and
- that the existing regulatory framework was not providing appropriate community safeguards or adequately regulating the industry participants.

3

A draft of the proposed standard was released in May 2005 for public consultation and a final standard is expected to be determined by the end of 2005.

The purpose of the proposed standard is to protect information (such as name, address and telephone number) about telecommunications customers held in the IPND from improper use or disclosure. The objective of the proposed standard is to balance community expectations about individuals' right to privacy and control of personal information and the use of this information for commercial purposes such as the provision of directory assistance services, and production of public number directories.

### Review of the Privacy Act

The protection of personal information falls within the purview of a number of regulatory mechanisms—both legislated and self-regulatory—that concern the use and protection of personal information. The most notable of these is the *Privacy Act 1988*.

In March 2005, OFPC released its report, *Getting in on the Act: The Review of the Private Sector Provisions of the Privacy Act 1988*, which includes recommendations about the use of personal data in the telecommunications sector. These recommendations included:

3

- in the context of a wider review of the *Privacy Act 1988*, looking at what constitutes personal information in light of technological developments;
- clarifying the relationship between the *Privacy Act 1988*, the *Telecommunications Act 1997* and the *Spam Act 2003*;
- considering ways to restrict access to personal information, such as the right to opt out of receiving direct marketing, possibly through an amendment to the *Privacy Act 1988* or through the establishment of a 'do not contact' register; and
- reviewing whether to prescribe telecommunications sectors, including ISPs and public number directory producers that handle personal information, as businesses to be covered by the *Privacy Act 1988*, regardless of their small business status—small businesses with an annual turnover below \$3 million are currently exempt from the *Privacy Act 1988*.

### Technological developments

Technological developments are also having a significant influence on the ways personal information can be tracked and disclosed. An example is radiofrequency identification, which allows individuals to be tracked or subject to covert surveillance. Many organisations now have greater access to telephone numbers and related customer information. New technologies have made it much easier to associate information such as an individual's name with other identifying or contact information. A significant concern of privacy advocates is how this information can be used to invade an individual's privacy. Traditional physical concepts of identity are being expanded to include telephone numbers and email addresses.

## CONSUMER COMPLAINTS

This section discusses telecommunications complaints made to independent complaints handling organisations. Most telecommunications complaints are made to the TIO, although complaints about telecommunications matters may also be made to the ACCC, the OFPC and TISSC.

## Telecommunications Industry Ombudsman complaints

### *TIO scheme membership*

The TIO is an independent scheme for the investigation and resolution of complaints by residential and small business customers of CSPs. The scheme is industry funded and operates under Part 6 of the *Telecommunications (Consumer Protection and Service Standards) Act 1999*.

Membership of the TIO scheme is mandatory for licensed carriers and for those CSPs who provide eligible carriage services to residential and small business customers. The scheme is funded by its members in proportion to the number and complexity of complaints made against them.

On 30 June 2005, there were 1,135 CSPs registered as TIO members, an 8.8 per cent increase on the 1,043 registered at 30 June 2004. Numbers in membership categories compared with the previous year are as follows:

- ISPs—763, up from 758 at 30 June 2004;
- telephony providers and ISPs—161, up from 106;
- telephony service providers—174, up from 146; and
- others—37, up from 33 (includes members who are required to join the scheme because they are carriers but are not ISPs or telephony service providers).

As shown in Table 3.1, this is the second consecutive year that TIO membership has increased and appears to mark the end of a period of consolidation in the industry between 2001 and 2003.

Table 3.1: TIO membership, 1998 to 2005

Year	Members
1998	535
1999	861
2000	991
2001	1,089
2002	963
2003	910
2004	1,043
2005	1,135

Source: TIO

### *Complaints*

The TIO scheme is known as an ‘office of last resort’, in that it does not investigate a complaint until the respondent has been given a reasonable opportunity to resolve the complaint without TIO involvement. As an alternative dispute resolution scheme, the TIO scheme differs from traditional court processes and tries to resolve disputes quickly and without undue bureaucracy.

The TIO deals with complaints that consumers have not been able to resolve with a carrier or their telephone or internet company. A wide variety of telecommunications issues fall within the TIO’s jurisdiction, but some complaints are more appropriately made to an alternative forum or jurisdiction. Complaints to the TIO serve as an important indicator of areas of consumer concern with telecommunications services. The TIO has four complaint management levels, and complaint trends for these levels are described below.

Most telecommunications complaints are directed to the CSP providing the relevant telecommunications services rather than to the TIO. Procedures for the recording and handling of customer complaints by service providers are set out in the *Industry Code ACIF C547:2004 Complaint Handling*:

- A level 1 complaint is an expression of grievance or dissatisfaction about a matter within the TIO's jurisdiction that the company concerned has had an opportunity to consider. The customer is usually referred to the respondent's escalated complaints section, and the customer is advised that the matter can be brought back to the TIO if still not resolved in 14 days. During 2004–05, there were 71,172 complaints (90.2 per cent of complaint contacts) received at this level.
- The TIO investigates complaints at levels 2 and 3 with the aim of conciliating an outcome between the customer and the respondent. Members have 21 days to resolve a complaint at level 2. If the complaint is not resolved at level 2 and the TIO believes it requires further investigation, the complaint is escalated to level 3. Members have 28 days to resolve a complaint at level 3. The TIO might make a determination at level 3 if the amount involved does not exceed \$400. In 2004–05, there were 6,047 complaints (7.7 per cent of complaint contacts) received at level 2 and 1,642 (2.1 per cent of complaint contacts) received at level 3.
- A level 4 complaint is either a complaint that was not resolved by the TIO at level 3 and that the TIO deems requires further consideration/investigation, or a complaint regarding a land access dispute. The TIO might make a determination or recommendation at level 4. A TIO determination is binding on the respondent, but not on the customer. The TIO can make a binding determination of up to \$10,000, and a non-binding recommendation of up to \$50,000. In making a determination, the TIO will have regard to the law, to industry codes, and to what is considered fair and reasonable in the circumstances. In 2004–05, 54 complaints (0.1 per cent of complaint contacts) were raised at level 4.

A complaint contact with the TIO may include multiple complaint issues. All complaints data presented in this report (except for the paragraph above) represents the number of complaint issues rather than the number of complaint contacts.

The total number of complaint issues received by the TIO increased by 48.2 per cent to 100,825 in 2004–05, up from 68,020 in 2003–04. This increase follows a nine per cent increase in 2003–04 and is the highest level of complaints recorded by the TIO (see Table 3.2). The total number of complaint contacts with the TIO increased by 31.9 per cent to 78,915 in 2004–05, up from 59,850 in the previous year.

As the increase in complaint issues was larger than the increase in complaint contacts, it is apparent that there is a greater portion of TIO complaints that are generating multiple issues. The reason for the increase is not clear. It may have resulted from an increase in the number of complaint contacts generating two or more issues; increased rigour by TIO staff in recording complaint issues associated with each complaint contact or a combination of both factors.

Table 3.2 shows complaint trends for complaint issues to the TIO disaggregated between fixed line, mobile and internet services. Figure 3.5 shows the same complaint issues data normalised per thousand customers. During 2004–05, there were large increases in all three categories: with mobile phone complaints up 88 per cent to 40,254, internet complaints up 54.1 per cent to 16,012 and fixed line complaints up 23.2 per cent to 44,559. More details of TIO complaints are given elsewhere in this report: see Chapter 4 for fixed line service complaints, Chapter 5 for mobile phone services, Chapter 6 for internet services and Chapter 7 for industry codes.

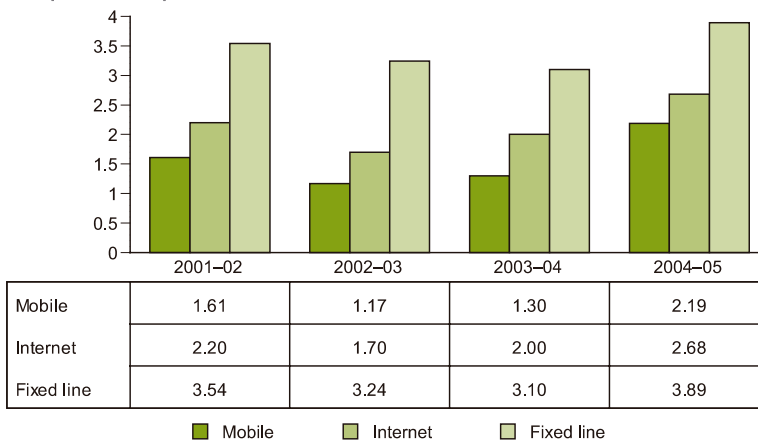
Table 3.2: TIO complaint issues, 1998–99 to 2004–05

Year	Mobile	Fixed	Internet	Total	% change
1998–99	63,069		3,954	67,023	–
1999–00	56,504		4,292	60,796	–9%
2000–01	72,745		7,965	80,710	33%
2001–02	20,434	40,303	9,497	70,234	–13%
2002–03	16,773	37,206	8,691	62,670	–11%
2003–04	21,465	36,167	10,388	68,020	9%
2004–05	40,254	44,559	16,012	100,825	48%

Source: TIO

Note: Complaints were not disaggregated between fixed and mobile services prior to 2001–02.

Figure 3.5: TIO complaint issues per 1,000 customers



Source: TIO data and industry service in operation information

Where the TIO recognises common elements among a sequence of complaints, it may identify a systemic issue and investigate the matter on that basis. During 2004–05, for example, the TIO undertook investigation of the following systemic issues and found that:

- a mobile provider failed to disconnect customers who requested disconnection;
- a phone card provider did not adequately explain the deduction of small, miscellaneous amounts from phone cards; and
- a mobile provider's bill was not easily understandable regarding charges for calls that exceeded the acceptable use policy for the service.

### Internet dumping

A significant consumer complaint issue in recent years has been that of 'internet dumping'. This occurs when a dial-up connection between a computer and the internet is disconnected and then reconnected to a new telephone number without the customer's full knowledge or consent. The disconnection and reconnection is generally initiated by software—known as an internet dialler—that is downloaded when the user accesses certain websites.

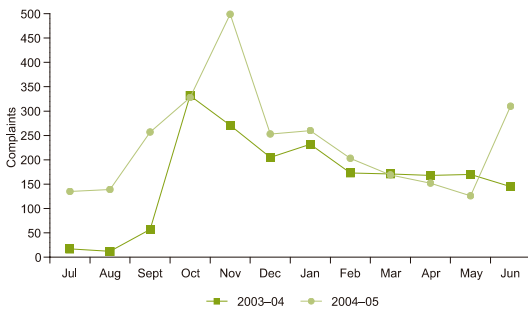
The number that a user's computer calls to establish the new dial-up connection is usually an international number, so the call involves a higher charge rate. The international numbers used for internet dumping are frequently associated with destinations to which international calls are more expensive than on average. Until September 2003, internet dumping also occurred on Australian premium rate numbers. In that month, Telstra, as the sole Australian provider of the access and billing platform for premium rate internet access, terminated this service.

The TIO reported 2,617 complaints about international internet diallers during 2004–05, up from 1,968 in 2003–04. Figure 3.6 compares complaints to the TIO about internet diallers operating on international numbers from 2003–04 to 2004–05 for 33 CSPs. The level of complaints for the period between July 2004 and February 2005 have been higher than the corresponding period in 2003–04, with the trend finally reversing in the months between March and May 2005. However, complaints in June 2005 doubled compared with those in June 2004, with half these complaints relating to an Australian company, Approach Telecom.

The peak in international internet dialler complaints of 332 in September 2003 coincided with the withdrawal of Telstra's access and billing platform for premium rate internet access. The peak of 499 complaints in November 2004 arose principally from the operations of Approach Telecom.

3

Figure 3.6: Complaints to the TIO about international internet dialler complaints, 2003–04 and 2004–05



Source: TIO (TIO quarterly and annual complaint numbers may differ from monthly figures due to complaints being escalated, upgraded or downgraded in subsequent months—the figures are indicative only.)

#### Industry responses to international internet dialler services

Since the withdrawal of Telstra's access and billing platform for premium rate internet access, at least two carriers—Telstra and Optus—have been identifying and barring international number ranges associated with internet dialler complaints.

Telstra, Optus, AAPT and Primus Telecom—through the auspices of ACIF—have developed an information-sharing protocol to allow them to exchange information about international number ranges associated with complaints about internet dialler services. The bulk of complaints to the TIO about internet diallers related to calls made using the international call services of these CSPs.

#### ACA investigation of internet dumping

On 13 April 2004, the Minister directed the ACA to investigate and report on the actions taken by CSPs to address internet dumping using international numbers. This direction also required the ACA to consider the appropriateness of a service provider determination that would require CSPs that provide international call services to bar access to certain international numbers or to a certain class or range of international numbers used for international internet dumping.

The ACA's October 2004 report to the Minister, *Preventing Unexpected High Bills: Credit Management in Telecommunications*, concluded that a service provider determination was not justified at that time because of a reduction in complaints about internet dumping using international numbers to a manageable level, and because there was a reasonable prospect that the ACIF protocol would produce a positive result.

#### International responses to internet dumping

A number of countries, including Sweden and Switzerland, require CSPs or ISPs to provide computer software free, or at cost, to prevent access to websites known to be associated with internet dumping or to prevent internet diallers seizing control of a modem connected to a computer. However, the most favoured international approach is for network operators to block calls to international numbers, or to entire number ranges or countries, associated with internet dumping. This process has been adopted to some extent in countries such as Canada, Denmark, Ireland and the United Kingdom.

There is generally good international cooperation in dealing with the problem of internet dumping. The authorities in several European countries responsible for handling complaints about internet dumping share information about problems with these diallers, to enable them to learn from each other's experience.

### Telephone Information Services Standards Council complaints

Premium rate services are content services that can be accessed by making a voice call, or by sending a fax or text message, and to which a premium charge applies. Premium rate services are available on numbers with the prefixes 188, 190, 191, 193–197 and 199, and through mobile carrier 'portals'—variously called proprietary networks or 'walled gardens'.

Premium rate services have traditionally been delivered by voice or fax, but in recent years they have become available to mobile phone customers using SMS. Examples of premium rate services include telephone counselling, financial or legal information, psychic lines, sporting results, ring tones, chat services, voting lines for television shows and competitions, and telephone sex services. A premium rate internet dialler service is an example of a premium rate service being used as the payment mechanism for access to pay sites on the internet.

TISSC is an independent regulatory body that sets fair standards for the content and advertising of premium rate services accessed via voice, fax and data, but not text, by means of a Code of Practice. (See Chapter 5: Mobile telecommunications services for a discussion of mobile premium rate data services.) Service providers supplying voice, fax and data premium rate services must abide by the TISSC Code of Practice.

TISSC receives consumer complaints about content and advertising on 190X telephone information services. During 2004–05, TISSC resolved 2,239 complaints, down from 10,554 in the previous year. This decrease was largely due to the reduced number of internet dialler complaints received by TISSC—around 1,000 in 2004–05, down from 8,000 in the previous year.

Although CSPs had begun to address the problem of internet dumping as early as August 2003, consumer complaints about internet dialler services continued for some time after this and breaches of the TISSC Code of Practice continued to be determined in relation to individual services for which TISSC began its investigation at the time the services were active. By the end of 2004, the rate of complaints received by TISSC about internet dialler services using Australian premium rate numbers had reduced significantly. This downturn allowed TISSC to increase its monitoring of other premium rate services.

Among complaints not related to internet dialler services, the nature and volume of content and advertising complaints were consistent with the previous year. The main categories of content complaints were as follows:

- false, out of date and misleading content (35 per cent);
- delays in service delivery (13 per cent);
- content unsuitable for a minor (10 per cent); and
- failure to insert a three-beep warning tone every five minutes during calls involving the provision of live information (10 per cent).

There were 765 complaints about advertising resolved by TISSC during 2004–05. The major categories were as follows:

- omission of the service provider name in display advertising (39 per cent);
- lack of legibility, clarity, prominence or correctness of call cost information (25 per cent);
- omission of an advertised warning that additional charges would apply to calls made from mobiles (seven per cent); and
- small print size for call cost information (six per cent).

## Australian Competition and Consumer Commission complaints

The ACCC, which administers the *Trade Practices Act 1974*, receives complaints from telecommunications customers about various issues. The ACCC attempts to resolve complaints over the phone or by correspondence, and refers others to state jurisdictions covering fair trading. When the ACCC considers that complaints are at a level indicative of a systemic issue, it will investigate the matter, which may lead to remedial action being taken by a trader. Table 3.3 gives a breakdown of complaints by type.

There were 4,882 telecommunications complaints received by the ACCC relating to the *Trade Practices Act 1974* during 2004–05, a decrease of less than one per cent from the previous year. Another 802 complaints during the same period were received about internet domain names (down from 1,208 in the previous year), which the ACCC does not count as telecommunications complaints.

Complaints were spread across fixed line, mobile and internet services, and there was also a significant number of billing complaints. As Table 3.3 shows, the numbers of complaints on some issues vary considerably from one year to the next.

3

Table 3.3: Telecommunications complaints to the ACCC by type, 2003–04 and 2004–05

	2003–04			2004–05		
	Part V section 52 (misleading and deceptive conduct)	All other parts of the Trade Practices Act	Total	Part V section 52 (misleading and deceptive conduct)	All other parts of the Trade Practices Act	Total
Fixed line services	669	1,160	1,829	670	646	1,316
Mobile services	287	408	695	583	493	1,076
Billing disputes	27	37	64	328	219	547
Provision and fault handling	335	574	909	99	100	199
Internet services	350	700	1,050	586	659	1,245
Phone cards	52	136	188	53	39	92
Other	80	98	178	160	247	407
Totals	1,800	3,113	4,913	2,479	2,403	4,882

Source: ACCC

Some representative telecommunications complaints received by the ACCC in 2004–05 are listed below.

Mobile complaints:

- long delays in getting phones repaired while they are under contract, or the consumer is blamed for the fault;
- the advertising of ‘free’ or ‘\$0’ mobile phones disguises the actual cost of the phone within the contract;
- misrepresentation of credit and call cap limits; and
- young people unknowingly accumulating debt from premium services.



#### Internet complaints:

- customers exceeding data volume limits for broadband accounts without understanding how data volumes are calculated; and
- differential periods for connection or repair of ADSL services depending on which CSP the customer is contracted to.

#### Billing complaints:

- bills due for payment within 14 days leave customers with no latitude and are subject to late fees;
- CSPs seem reluctant to accept payments by instalment from customers experiencing financial hardship; and
- difficulties in understanding mobile phone bills.

#### Bundling complaints:

- bundling is a condition for access to customer discounts; and
- a service has been disconnected following the non-payment of a bill for another service.

#### Contract complaints:

- unilateral variation of contract clauses;
- charging to view terms and conditions online; and
- provision of incorrect or misleading information by sales staff.

#### Credit default complaints:

- refusal of service because of a listed credit default concerning the customer or a related third party;
- a lack of options for the redress of disputed debts; and
- the non-removal of customers from credit default lists after debts have been paid or settled.

### Telephone sex services

Access to telephone sex services for which the charge for the service appears on a telephone bill is regulated under the *Telecommunications (Consumer Protection and Service Standards) Act 1999*. Such services may only be provided on numbers beginning with the prefix 1901 and other numbers specified by regulation. Customers must agree in writing to the use of their telephone service for the supply of the service, and their access must be restricted by use of a personal identification number (PIN) to prevent unauthorised access.

Telephone sex services for which payment is made other than via the telephone bill, such as using a credit card, are not subject to these requirements.

### *Use of 1901 numbers and personal identification numbers*

The number of telephone sex services offered using numbers with the prefix 1901 increased from one service in 2003–04 to three services in 2004–05. The number of PINs issued dropped from 60 in 2003–04 to 17 in 2004–05, with 1045 issued since the introduction of legal requirements applying to telephone sex services. The low number of services and decrease in the number of PINs issued stems from the availability of similar services offered in Australia and overseas using alternative payment methods.

### *Telephone sex service complaints*

Members of the public make complaints to the TIO and TISSC about premium rate services, some of which may deliver sexually explicit content. The TIO does not deal with content-related complaints. If, while investigating a billing dispute about a premium rate service, the TIO finds that the content of the service is sexually explicit, it records the complaint and refers the matter to TISSC for further investigation.

3

TISSC may receive complaints about telephone sex services from members of the general public in addition to referrals from the TIO. If TISSC considers that the service content may be in breach of legal requirements, it refers the matter to Telstra as the supplier of the 1901 premium rate service platform, for further investigation. The outcome of any investigation by Telstra may be to close down the service.

ACMA may receive complaints from the public about telephone sex services, but is unable to provide a remedy for the consumer in terms of waiver of charges. On investigation of a premium rate service, ACMA can issue an evidentiary certificate that is prima facie evidence of a telephone sex service (this was formerly the role of the ABA). Once an evidentiary certificate is issued, ACMA is able to take action against the CSP that provided access to the service and the telephone sex service provider.

During 2004–05, the ACA received one complaint about calls to a telephone sex service included in a customer's bill and is investigating the matter.

Of the complaints relating to premium rate services investigated by TISSC in 2004–05, 71 services were identified as containing sexual content, and were referred to Telstra as the CSP providing access to the service. The equivalent figure in 2003–04 was 24. Most of these services operated on numbers beginning with a prefix other than 1901, and were supplied without PIN security.

Of these 71 services:

- 68 services were subsequently cancelled by Telstra, having been found to have contravened the contractual arrangement between Telstra and the relevant service provider;
- two service provider staff members or contractors who provided live chat services to callers were dismissed; and
- one service routing error was rectified.

Forty-seven of the 71 services were identified from consumer complaints, while the remaining 24 services were identified through monitoring of advertisements and testing of these services by TISSC. The high rate of cancellation per service identified suggests that there are several content service providers likely to be operating in breach of the legal requirements relating to telephone sex services.

While action by ACMA under the *Telecommunications (Consumer Protection and Service Standards) Act 1999* can lead to the cancellation of a service and pecuniary penalties applied to either the content service provider or CSP, there is no provision under the legislation for a financial remedy for the consumer. However, the industry self-regulatory approach provided by TISSC through its Code of Practice has been shown to be effective in having non-compliant services cancelled and refunds provided to complainants. This outcome may partially explain the low number of complaints received by the TIO and ACMA.

One new trend observed during 2004–05 is the use of premium rate services as the payment mechanism for access to internet websites hosting premium adult content.

## ACCESSIBLE TELECOMMUNICATIONS FOR PEOPLE WITH DISABILITIES

This section discusses industry performance and related developments concerning accessible telecommunications for people with disabilities. The performance of the National Relay Service (NRS) and disability equipment programs are reviewed below.

In June 2005, the Disability Rights Unit of HREOC issued its *Access to Telecommunications Status Report*. It discussed the progress towards accessible telecommunications for people with disabilities in Australia since HREOC's national accessible telecommunications forum, which was held in November 2003. HREOC's assessment was that some valuable work has been done over the intervening period to 30 June 2005, and that all stakeholders have shown a willingness to engage with the complex issues underpinning accessible telecommunications. However, much work remains to be done.

HREOC reported that there is a widespread perception in the disability sector that access to telecommunications is either diminishing, or that some of the current initiatives will only result in the reclamation of lost ground:

The spectre of the substantial loss of access resulting from the introduction of the GSM mobile phone [networks] continues to inhibit confidence that adequate steps are being taken to ensure that this situation is not repeated with new technology. In particular, there is a widespread and understandable belief among the disability sector that the only way to ensure access to new telecommunications technologies is for there to be more regulatory safeguards than at present.

HREOC noted the rapidity of the growth and change in the telecommunications industry as new products and services are introduced with increasing frequency, and highlighted the complexity of monitoring and analysing their impact on people with disabilities. HREOC advocates the pursuit of two complementary strategies: disability impact analyses before the introduction of new technologies and a regulatory framework that makes accessibility to a pre-determined level mandatory.

### The National Relay Service

The NRS enables people with a hearing or speech impairment to access a standard telephone service on terms, and in circumstances, that are comparable to the access that other Australians enjoy.

The service provides users with a variety of relay services, including:

- text-based communications—via teletypewriter (TTY) or computer with modem;
- voice carry over—enabling people with hearing impairment to use their voice to communicate with a hearing person and read the response on a TTY;
- voice carry over to voice carry over—enabling two people with hearing impairment to communicate using their own voices and read the responses on TTYs;
- hearing carry over—enabling people with speech impairment to listen to a voice conversation and to type their response using a TTY; and
- speech-to-speech relay—enabling two people with speech impairment to converse over the telephone.

The NRS also provides a text-based emergency call relay service for people with hearing or speech impairment. This means that text users can communicate with emergency service organisations via real-time relayed messages.

*Trends in usage of the National Relay Service*

Figure 3.7 provides quarterly and annual figures for 2004–05 on the number of inbound calls made to the NRS and successful outbound calls. The higher number of outbound to inbound calls indicates that callers to the service are making multiple outbound calls per contact.

Figure 3.7: Calls to and from the National Relay Service; 2001–02 to 2004–05

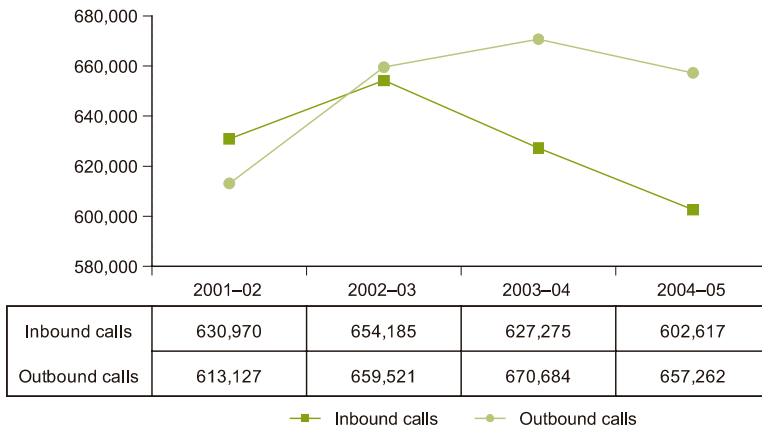
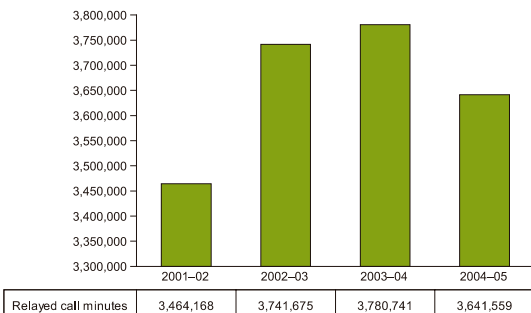


Figure 3.8: Call minutes relayed by the National Relay Service; 2001–02 to 2004–05



Usage of the NRS decreased slightly in 2004–05 compared with the previous year, with the number of inbound calls down by 3.9 per cent. Indicating a similar trend, the number of successful outbound calls decreased by two per cent from 2003–04 and relayed call minutes (Figure 3.8) decreased by 3.6 per cent. The average call duration was 5.5 minutes, a slight decrease from the average of 5.6 minutes in 2003–04. The decrease in usage of the NRS is attributed to the take-up of other technologies by people with hearing or speech impairment, such as instant messaging, SMS and email.

Table 3.4 shows that TTY calls account for the majority of inbound calls to the NRS. However, as shown in this table, the 58.8 per cent recorded for 2004–05 was lower than 2003–04, when TTY calls accounted for 62 per cent of inbound calls. Use of voice carry over, modems and speech-to-speech relay services has increased slightly in 2004–05, while hearing carry over usage has remained steady.

Table 3.4: Inbound calls to the NRS, 2001–02 to 2004–05

	Voice	Voice carry over	Speech-to-speech relay	Modem	Hearing carry over	TTY
2001–02	19.5%	12.0%	0.6%	0.5%	0.4%	67.0%
2002–03	19.7%	13.1%	0.9%	0.6%	0.4%	65.0%
2003–04	20.1%	15.0%	1.3%	0.8%	0.8%	62.0%
2004–05	20.7%	16.8%	1.9%	1.0%	0.8%	58.8%

The proportion of outbound calls using voice remained consistent with voice calls made in 2003–04 (see Table 3.5), with this category of calls accounting for almost nine out of ten outbound calls made from the NRS. Voice carry over and speech-to-speech relay usage has increased slightly while TTY usage has decreased.

Table 3.5: Outbound calls from the NRS, 2001–02 to 2004–05

	Voice	Voice carry over	Speech-to-speech relay	Modem	Hearing carry over	TTY
2001–02	92.8%	1.9%	0.7%	0.0%	0.0%	4.5%
2002–03	89.7%	2.6%	1.0%	0.0%	0.1%	6.0%
2003–04	88.3%	3.4%	1.5%	0.0%	0.2%	6.2%
2004–05	88.3%	4.1%	2.0%	0.0%	0.2%	5.3%

### *Funding of the NRS*

The NRS is provided under contract to the Commonwealth by the Australian Communication Exchange (ACE). ACE began delivering the service in 1995.

The NRS is funded by a levy on eligible telecommunications carriers based on eligible revenue assessments for the relevant financial year. The cost of providing the service is based on a forecast of demand for the upcoming quarter and an adjustment for the actual performance in a previous quarter. Payments to the NRS provider may include bonuses or penalties, depending on performance against contractual service standards during the relevant quarter.

The cost of providing the NRS in 2004–05 was \$16.2 million, up 0.4 per cent from 2003–04. As in previous years, Telstra was the major contributor to the funding of the service, providing more than 67 per cent of funding, followed by Optus (19 per cent) and Vodafone (five per cent). Remaining contributions were made by more than 65 other carriers.

### *Performance of the NRS*

The contract between the Commonwealth and ACE sets out performance standards that ACE is required to meet. These service standards deal with call blockage to the NRS and to the text-based emergency call relay service (accessed using the 106 emergency number), call answering times for the text-based emergency relay service and the level of complaints received by the service. With the exception of call blockage to the text emergency relay service (see Chapter 10: Community and national interests), ACE met all of the service standards in 2004–05.

The contract requires that no more than five text emergency service calls per 1,000 (0.5 per cent) to the NRS will receive a busy signal. ACE failed to meet this service standard in three of the four quarters during 2004–05. The ACA and DCITA met regularly with ACE management during 2004–05 to voice concerns and seek remediation of the continuing growth in non-genuine calls and the inability of the provider to consistently manage blockage levels for the text emergency call relay service. The ACA monitored blockage levels weekly throughout 2004–05. This practice will continue in 2005–06.

## Disability equipment programs

### *Background*

The universal service regime established under Part 2 of the *Telecommunications (Consumer Protection and Service Standards) Act 1999* aims to ensure that all people in Australia, including those with disabilities have reasonable access to specified telecommunications services on an equitable basis.

The universal service obligation (USO) requires the universal service provider to:

- supply equipment to enable access to the standard telephone service by people with a disability; or
- provide access to a service equivalent to the standard telephone service for people with a disability for whom the use of a voice service is impractical, including the provision of customer equipment such as a TTY.

As the sole universal service provider, Telstra is the only service provider that must provide such equipment under telecommunications legislation. Telstra specifies the service it will supply to people with a disability in its USO standard marketing plan.

The *Telecommunications (Equipment for the Disabled) Regulations 1998* specify the range of equipment that Telstra must offer to users who require enhancements to a voice service. Telstra provides this equipment through its Disability Equipment Program.

Where any service provider supplies equipment as a part of the provision of a service, an obligation exists under the *Disability Discrimination Act 1992* for the provision of equipment that allows equivalent access for consumers with a disability, except where this would result in unjustifiable hardship for the provider. If a carrier does not provide equipment as part of its general service to customers, it is not obliged to provide specialised equipment for people with disabilities.

### *Supply of disability equipment*

Telstra is the major supplier of disability equipment. Building on the trend evident in 2003–04, the reduction in the number of items of disability customer equipment supplied by Telstra continued in 2004–05—down 27 per cent from 2003–04 and down nearly 71 per cent from 2002–03 (refer to Table 3.6).

Telstra attributes this decline primarily to the introduction of its new standard telephone, the T1000s, which has design features that make it more usable for people with a disability. These features include volume control, improved keypad button spacing, 10 one-touch memory storage buttons and tactile marker on the ‘5’ key. Telstra advises that, in many cases, customers with hearing impairment and other disabilities can now use this standard rental phone. This has led to a decrease in the demand for the provision of volume control telephones through the Disability Equipment Program.

Telstra also reports that:

- a cordless phone was introduced into the Disability Equipment Program in 2004–05, with 274 handsets supplied; and
- a big button/multipurpose disability phone was made available in July 2005.

Optus reports that it no longer tracks the provision of disability equipment separately from the ordering of standard equipment. Optus states that the inclusion of the volume control feature in its standard telephone handset means that, in most cases, it is not aware of where a handset is being used by a customer with a disability. Local access resale customers continue to obtain disability equipment through Telstra's Disability Equipment Program.

AAPT advised that it received and fulfilled a total of 655 requests to supply equipment to people with a disability in 2004–05. This compares with 2,409 requests in 2003–04. The T400 volume control handset was the most requested piece of equipment.

Primus received 80 requests, of which 55 were fulfilled. The reasons for requests not being fulfilled included forms not returned by the customer, equipment not available or incorrect information supplied by the customer.

Table 3.6: Details of disability equipment supplied by Telstra, 2003–04 and 2004–05

Equipment type	2003–04	2004–05
Additional socket	330	280
Cochlear implant (two models)	96	51
Cordless phone (Nomad F2400)	n/a	274
Double adaptor	2,416	1,365
General purpose alarm	2,431	2,175
Hands-free telephone	387	298
Hold-a-phone	0	1
Modem	4	3
Standard rental telephone	13	3
TTY (three models)	573	437
Braille TTY	3	4
TTY large visual display	0	7
Visual signal alert	156	99
Voice aid phone	52	177
Volume control telephone	7,023	4,658
Total	13,484	9,832

*n/a: not applicable*

# chapter 4

## CHAPTER 4: FIXED TELEPHONE SERVICES

### 4

Key results	57
Fixed telephone services market	58
<i>Fixed line services</i>	58
<i>Supply of CSG services</i>	59
<i>Growth in carrier numbers</i>	60
Usage trends and price movements	60
Service quality improvements	62
<i>Improvement in service for pair gain systems</i>	62
<i>Extended zones service upgrade</i>	63
Consumer satisfaction survey	64
<i>Findings – fault restoration</i>	64
<i>Findings – connection of services</i>	65
Telecommunications Industry Ombudsman complaints	66



## CHAPTER 4: FIXED TELEPHONE SERVICES

This chapter reports on significant developments in the fixed telephone market during 2004–05. This includes the size and structure of the market, the impact on consumers due to price movements, the results of the ACA's survey of consumer satisfaction with fault repair and connection of services, and complaints to the Telecommunications Industry Ombudsman (TIO). Monitoring of network performance and quality of service for the standard telephone service (STS) is reported in Chapter 8.

In this chapter, the analysis of developments with fixed services is focused on access—provision of a physical line—and usage, including local, national long distance and international calls. The STS is a carriage service for the purpose of voice telephony and is the primary service subject to telecommunications regulation in Australia. The STS is defined in section 6 of the *Telecommunications (Consumer Protection and Service Standards) Act 1999*.

# 4

### KEY RESULTS

- ACMA's estimate of the number of basic fixed line services at 30 June 2005 is 11.46 million, a 1.7 per cent decrease on the 11.66 million services 12 months earlier.
- Customer Service Guarantee (CSG) services declined by four per cent in 2004–05 to 8.96 million.
- The benefits resulting from changes in telecommunications services in 2004–05 (discussed in Chapter 2) were:
  - fixed line revenue decreased for all major service call categories—local, long distance, international and fixed-to-mobile—with access revenue being the only service category having increased revenue from the previous year;
  - overall, fixed line customers enjoyed lower call costs;
  - despite these lower call costs, the volume of calls and the total call minutes were lower for local, long distance and international calls.
- ACMA's 2005 consumer satisfaction survey, focusing on fault repair and connection of service found that for both survey modules overall satisfaction levels were slightly lower in 2005 than in 2004, and dissatisfaction levels slightly higher. However, satisfaction with the punctuality of technicians was slightly higher and dissatisfaction slightly lower. The differences in overall satisfaction were not statistically significant, but reversed the positive trend from 2003 to 2004.
- Complaints to the TIO about fixed line telephone services increased by 23.2 per cent during 2004–05 to 44,559, up from 36,167 in 2003–04, with billing complaints remaining the most numerous complaint issue.

## FIXED TELEPHONE SERVICES MARKET

This section discusses carriers and carriage service providers (CSPs) supplying fixed telephony services, particularly focusing on subscriber numbers and the characteristics of the networks used to supply these services. It analyses the market for these services in terms of:

- the number of services in operation;
- the number of CSG services in operation—this is a measure of the number of STSs supplied to residential and small business premises with five lines or less and is a significant proportion of the STS market; and
- the number of CSPs providing services in urban and regional centres.

There have traditionally been three main models for supplying fixed line telephone services in Australia:

- direct connect—customers are connected directly to a carrier’s network;
- access-based—CSPs use their own network in combination with services provided by other carriers; and
- resale—CSPs purchase end-to-end wholesale telecommunications services and resell to retail customers.

4

The extent to which each model is used largely depends on the geographic location of particular network-based infrastructure. However, these traditional models are being challenged by new entrants—such as internet service providers (ISPs)—offering different approaches to the packaging and supply of telecommunications services.

The fixed line residential and small business telephone market continues to be primarily analysed and reported in terms of trends in the number of basic access lines in operation. However, it is becoming increasingly difficult to reliably estimate the number of fixed line services due to the provision of voice and data services over common network infrastructures. This trend was first evident with services to large corporations where circuit-based analog access to the local exchange is being replaced by packet-based digital access to the telecommunications network.

This trend is also becoming evident in the residential and small business market as voice telephony services can be provided using infrastructure that may also be configured by the customer or the CSP to provide other services. Carriers may not have information about the number or types of voice telephony services established by a customer and connected to their networks, and carriers sometimes record the number of customers or measure capacity of the basic access service provided, rather than recording the number of services in operation.

### Fixed line services

ACMA received information from six CSPs—AAPT, Optus, Primus, Powertel, Telstra and TransACT—about their supply of the STS in 2004–05. These CSPs supplied the vast majority of residential and business STSs in 2004–05. Based on their responses, ACMA estimates that there were 11.46 million fixed line STSs in operation in Australia at 30 June 2005, a 1.7 per cent decrease from 30 June 2004. (This estimate needs to be considered in the context of the definitional problems in measuring STSs referred to in the preceding section.)

By way of comparison, as discussed in Chapter 2, ACMA’s consultants ACIL Tasman estimated that residential and business fixed line subscribers decreased by two per cent and four per cent respectively in the 12 months to 31 March 2005, using a different data set and assumptions from those used by ACMA.

Table 4.1 shows the number of fixed services in operation for 2003–04 and 2004–05.

Table 4.1: Number of fixed services in operation ('000s), 2003–04 to 2004–05

Fixed service category	Total ('000)	
	2003–04	2004–05
Retail (own network)	9,820	9,379
Wholesale	1,840	2,081
Total	11,660	11,460

Source: CSP data

Table 4.2 shows the reduction in Telstra fixed services over the past three years, which decreased by 1.6 per cent during 2004–05 when compared with 2003–04. This decrease was comprised of a 4.7 per cent decrease in retail residential customers, a 4.6 per cent decrease in retail business customers and a 12.5 per cent increase in wholesale customers.

Table 4.2: Telstra's fixed services ('000s), 2002–03 to 2004–05

Fixed service category	2002–03 ('000)	2003–04 ('000)	2004–05 ('000)
Residential (retail)	6,200	5,870	5,592
Business (retail)	2,710	2,570	2,453
Wholesale	1,550	1,840	2,077
Total	10,460	10,280	10,122

Source: Telstra

The continuing trend of a decrease in the number of retail services provided by Telstra on its own network, and the increase in the number of its wholesale services, can be primarily attributed to increased competition in the fixed telephony market.

### Supply of CSG services

Services covered by the CSG Standard represent a significant component of all fixed STSs. Measurement of the number of CSG services provides an important indicator of movements in the residential and small business fixed telephone markets. There is greater certainty in the CSG service population because the definition of a CSG service is prescribed in the CSG Standard, with corresponding obligations attaching to CSPs in the supply of these services. There is consequently a common framework for recording the service population between CSPs, which, as discussed previously, does not apply to fixed voice services more generally.

ACMA received information from AAPT, Optus, Primus, Powertel, Telstra and TransACT about their supply of CSG services. These CSPs supply the majority of CSG services. The number of CSG services for the past three years is shown in Table 4.3.

The number of CSG services declined by 4.0 per cent in 2004–05. Telstra and Optus are the major suppliers of CSG services and in 2004–05 accounted for 77.3 per cent and 12.4 per cent of CSG services respectively. Telstra's CSG-eligible services decreased by 4.8 per cent, continuing the trend from 2002–03. Similarly, Optus' CSG-eligible services decreased by 3.0 per cent in 2004–05. AAPT's CSG-eligible services increased by 66 per cent in 2004–05, increasing the strong growth rate of 20 per cent from 2002–03.

Table 4.3: CSG services ('000s), 2002–03 to 2004–05

	2002–03 ('000)	2003–04 ('000)	2004–05 ('000)
Telstra	7,615	7,281	6,930
Optus	1,187	1,144	1,111
AAPT	271	325	541
Other	396	580	375
Total	9,469	9,330	8,958

Source: CSP data

The reduction in the number of CSG-eligible services in 2004–05 is consistent with the estimated reduction in STSs more generally over this period.

### Growth in carrier numbers

Notwithstanding the marginal decline in STSs over 2004–05, there was a significant expansion in the number of carriers offering directly connected services to residential and small business customers during the year. These carriers supplied services in urban, regional and rural Australia.

4

ACMA recently reported in its publication *Telecommunications Services Available in Australia 2004–05* that there were 38 carriers using their own network infrastructure to provide fixed line telephone services to business and residential customers during 2004–05. Since 2002–03, 20 new carriers have entered the fixed telephony market, 15 of whom are offering voice over internet protocol (VoIP) technology to deliver fixed line telephone services to residential and small business customers using wireless and wireline broadband technologies.

This is indicative of a more general trend for resale service providers and ISPs to evolve into infrastructure owners. ISPs packaging broadband services through xDSL technologies are bundling voice calls into their service package and using a mix of VoIP and circuit-switched technologies for data transfer. The greater flexibility in carrier services resulting from digitalisation allows greater price and product differentiation, and enables service providers to target their service offerings to specific consumer or geographic market segments.

ACMA estimates that, in addition to Telstra, there are 18 carriers offering fixed line telephone services at identified regional locations around Australia. Some of these are marketing themselves as regionally-based suppliers of bundled services including fixed voice telephony. The increased focus on regional markets is confirmed by the 18 per cent increase in the cumulative total of non-metropolitan geographic numbers allocated by ACMA in 2004–05 to new service providers—39.70 million at 30 June 2005, up from 33.66 million 12 months earlier. By comparison, the cumulative total for metropolitan geographic numbers was 36.51 million, a five per cent increase from 34.87 million since 2003–04. See Chapter 11: Facilitating competition, for more information about geographic number allocation.

## USAGE TRENDS AND PRICE MOVEMENTS

The November 2005 report, *Consumer benefits resulting from Australia's telecommunications sector*, prepared for ACMA by ACIL Tasman (summarised in Chapter 2) gives an overview of price movements that indicate areas of consumer benefit and detriment during 2004–05. The general trend in recent years of lower call costs and higher access charges for fixed services was maintained in 2004–05 and is discussed in this section.

The key trends recorded by ACIL Tasman in basic access (rent of the telephone line) revenue in the 12 months to 31 March 2005 relative to the previous 12 month period:

- a 6.9 per cent increase in the average revenue per subscriber, arising from a 10.2 per cent increase for residential customers combined with a 2.2 per cent increase for business customers; and
- a total revenue increase for residential customers and for the sector as a whole, although total revenue for business customers decreased. Separately for 2004–05, Telstra reported a 3.9 per cent increase in total revenue, comprised of a 0.3 per cent increase for retail customers and a 22.5 per cent increase for wholesale customers.

These trends need to also be considered in the context of decreasing fixed line service numbers. One of the key drivers for fixed-to-mobile substitution in Australia is the increase in fixed line access charges in recent years, making mobile services relatively more attractive.

Table 4.4 shows the percentage decreases in revenues, call volumes and call minutes for local, long distance and international calls. Data is provided from the ACIL Tasman report previously cited and, for purposes of comparison, Telstra's report to the Australian Stock Exchange on 11 August 2005. The table shows that for all call types there were decreases in total revenue, the number of calls and the volume of call minutes. In conjunction with the decrease in fixed line subscriber numbers, these figures indicate that individual fixed line subscribers are each making fewer local, long distance and international calls and that their calls are getting shorter.

Table 4.4: Percentage decreases from 2003–04 to 2004–05 in fixed line revenue, call volume and call minutes

	Industry decrease (%)			Telstra decrease (%)		
	Local	Long distance	Inter-national	Local	Long distance	Inter-national
Revenue	14.2	8.7	6.6	14.6	9.6	12.0
Call volume	7.7	4.3	3.7	9.9	n/a	n/a
Call minutes	10.5	6.2	4.3	n/a	9.1	10.9

*n/a: not available*

*Source: ACIL Tasman and Telstra 11 August 2005 report to the Australian Stock Exchange*

*Note: Industry data is for 12 months to 31 March 2005*

ACIL Tasman reported that total fixed-to-mobile call revenue decreased by 1.7 per cent in the 12 months to 31 March 2005 when compared with the previous 12 month period, although the number of calls increased by 3.7 per cent and total call minutes increased by 3.0 per cent. (In comparison, Telstra reported a 1.9 per cent decrease in total revenue from fixed-to-mobile calls in 2004–05 and a 3.5 per cent increase in the volume of call minutes.) The call volume increase was despite the 1.7 per cent decrease in fixed line subscribers, and may be attributed to a combination of lower fixed-to-mobile call charges and an 11.8 per cent increase in mobile subscriber numbers (discussed in Chapter 5).

For residential customers the average revenue per call and the average revenue per call minute were both slightly higher, whereas for business customers they were substantially lower—9.5 per cent lower for average revenue per call and 8.7 per cent lower for average revenue per call minute. These results need to be assessed in the context of a general decrease in fixed-to-mobile call rates for business customers, whereas for residential customers there was a slight increase in charges in 2004–05.

Telstra attributed the changes in its fixed line revenues and usage as follows:

- Basic access retail revenue increased due to a price increase in June 2004; but this was offset by a decline in the number of basic access lines due to a combination of competition and product substitution. Basic access wholesale revenue increased due to a combination of more lines and higher access charges.

- The decline in local call revenue was mainly due to a 9.9 per cent reduction in call volumes resulting from product substitution, combined with lower profit margins due to competitive discounting.
- The reduction in national long distance revenue was mainly the result of a 9.1 per cent decline in call minutes due to fewer calls of shorter average duration. Similarly, the reduction in international revenue was largely due to an 10.9 per cent decline in call minutes resulting from the take-up of pre-paid international calling cards and greater use of email and voice chat as cheaper alternatives.

The decline in the usage of fixed line services reflects changing consumer use of telecommunications services, with substantial long-term implications for the future direction of the telecommunications industry. There are two trends: the transition to VoIP, which is not yet significant in Australia for residential customers, and fixed-to-mobile substitution.

The number of mobile services is continuing to grow strongly in Australia, while the number of fixed line services is marginally declining, reflecting the increasing price competitiveness of mobile phones and the utility that consumers perceive in mobile services. The decline in revenue from fixed line phone services is happening in developed countries worldwide, as mobile phone services become ubiquitous and more price competitive. The increased use of IP telephony by the corporate sector and of VoIP by residential customers is also expected to contribute significantly to the decline of fixed line revenue.

## 4

Eligible CSG services declined by 4.0 per cent in 2004–05, compared with a smaller decline of 1.5 per cent in the previous year, and, as noted above, fixed line call volumes—apart from fixed-to-mobile calls—also declined. Likely reasons for these declines include:

- line rental charges are relatively expensive when compared with the variety of low-entry solutions for mobile customers such as pre-paid accounts;
- the necessity for second lines in homes is becoming less important as customers transition from dial-up internet services to broadband and facsimile communication becomes less important;
- alternative communication methods are becoming more readily available—email, SMS and instant messaging; and
- capped call plans may give customers access to free calls within their overall consumption basket of fixed and mobile call products.

An Ovum report published in April 2005 *Fixed–mobile substitution in Australia: does mobile have the winning hand?* analyses the separate drivers for: access substitution, where customers give up their fixed line and rely on their mobile phone; and call substitution, where subscribers retain their fixed line but make fewer outgoing calls. The report concludes that xDSL broadband take-up will restrain the rate of decline of fixed line services, whereas innovative and competitive pricing packages will drive call substitution from fixed-to-mobile networks.

## SERVICE QUALITY IMPROVEMENTS

### Improvement in service for pair gain systems

A pair gain system is a transmission system within the customer access network that uses concentrators or multiplexers so that fewer wire pairs may be used than would otherwise be required to provide service to a given number of subscribers. With 6/16 pair gain systems, for example, up to 16 subscribers share six lines to the nearest telephone exchange. Pair gain systems have been used in outer metropolitan or rural exchanges where the number of subscriber lines from a local exchange was nearing capacity, or the provision of an exchange line for every subscriber was uneconomical.

As a result of recommendations from the *Regional Telecommunications Inquiry*, the government implemented strategies to improve the quality of services affected by the use of 6/16 and similar pair gain systems. These are older analog pair gain systems used on Telstra’s network in non-metropolitan and rural areas that have been the cause of concern regarding quality of service and xDSL supportability. The Commonwealth entered into a deed of agreement with Telstra in December 2003 entitled *Strategy for Improving Levels of Service for 6/16 and Other Similar Pair Gain Systems*, which is known as Deed 2.7.

Deed 2.7 relates to strategies that Telstra employs to improve service levels for voice telephony over pair gain systems. ACMA monitors the results of these strategies and the general trend indicates that service levels for pair gain services continued to improve during 2004–05. In particular, 2004–05 has seen a continued move away from services provided by ageing pair gain technology, lower congestion and more timely remediation of faulty systems.

Deed 2.7 seeks to phase out a specific type of pair gain system known as mini-line concentrators (MLC) that are in most instances incompatible with ADSL, often have poor voice quality, and are subject to congestion in peak periods. MLC systems include 6/16 pair gain and similar systems. The number of MLC systems in Telstra's network decreased from 4,817 at 30 June 2004 to 4,090 at 30 June 2005.

Telstra is required to monitor network congestion levels for customers using MLCs. Congestion levels are measured by the call set-up success rate, with the higher the measure, the lower the level of congestion. The average call set-up success rate for MLCs increased from 94.8 per cent in 2003–04 to 97.6 per cent in 2004–05, representing an overall improvement in service quality during the year for customers on these services.

Other positive pair gain systems developments in 2004–05 associated with Deed 2.7 were:

- the number of customers on MLC systems continued to decline, from 53,808 to 42,490;
- the remediation of MLC systems within target restoration timeframes, where there is sufficient alternative infrastructure, improved from 82.0 per cent to 84.2 per cent; and
- the remediation of MLC systems within target restoration timeframes, where there was not sufficient alternative infrastructure, increased from 81.3 per cent to 89.7 per cent.

4

### Extended zones service upgrade

The extended zones agreement is a \$150 million contract between the Commonwealth and Telstra for the provision of improved telecommunications services to customers living in the Telstra extended call charging zones, which are located in the remotest parts of Australia. Under the agreement, which commenced in July 2001 and operates for a period of 10 years, Telstra was required to provide:

- untimed calls at the local call rate in the extended zones;
- enhanced services, including the offer of an always-on internet access service, improved dial-up access speeds and improved timeframes for the connection of new services in the extended zones; and
- an upgrade of the telephone network in the extended zones.

ACMA is the contract manager for the agreement. Since the completion of the network upgrade in March 2004, ACMA's monitoring of performance has focused on Telstra's progress in addressing service quality problems experienced by CDMA WLL customers. CDMA WLL, a wireless technology used to give remote customers access to the telephone network, was one of three technologies Telstra deployed to upgrade the telecommunications network in the extended zones.

Following the ACA's June 2004 satisfaction survey of CDMA WLL customers in the extended zones, which indicated low levels of satisfaction, Telstra undertook a series of remedial actions to address the service quality problems identified. In January 2005, the ACA conducted a second survey to assess the effectiveness of Telstra's remedial actions and the level of satisfaction with CDMA WLL services. The survey results indicated that, compared with the results of the June 2004 survey, satisfaction with:

- call quality increased from 49 to 75 per cent of respondents;
- facsimile services increased from 64 to 68 per cent of respondents; and
- internet services decreased from 48 to 46 per cent of respondents.



Despite these general improvements in satisfaction levels—with the exception of internet services, where satisfaction levels were largely unchanged—satisfaction with call quality and facsimile services remained below levels recorded before the upgrade to CDMA WLL. While the survey results indicated a decrease in the occurrence of call quality problems such as echo, an appreciable proportion of respondents reported that they continued to experience service quality issues.

Telstra advised ACMA that, following the implementation of system-wide solutions to address service quality problems such as echo and call drop-out, it has focused on the resolution of problems with individual services. It also advised ACMA of its plans to introduce a new local access unit in early 2006 and of its longer-term plans to upgrade the CDMA WLL platform. ACMA will continue to monitor and report on these services while these problems remain.

## CONSUMER SATISFACTION SURVEY

In June 2005, the ACA conducted its eighth annual consumer satisfaction survey as part of its telecommunications industry monitoring and reporting responsibilities. The survey was confined to fault restoration and connection of service and was conducted by Roy Morgan Research. Customers were surveyed who had either had a fault repair or a service connection in the three months from February to April 2005. The results are reported separately for residential and small business customers, as well as for urban, rural and remote customers.

4

The survey results for faults and connections were consistent with the results from the 2004 survey: overall satisfaction levels were slightly lower; satisfaction levels for business customers were mostly significantly lower than for residential customers; and the differences in satisfaction levels between urban, rural and remote customers were mostly not significant. Results were generally consistent across states and territories. Satisfaction with the punctuality of technicians was higher in 2005 than in 2004, with satisfaction higher among residential customers than among business customers.

### Findings – fault restoration

The proportion of customers satisfied or very satisfied with their fault repair overall was 67 per cent of residential customers and 59 per cent of business customers, slight decreases when compared with 70 and 62 per cent, respectively, in 2004. The overall satisfaction level was 66 per cent in 2005, down from 69 per cent in 2004 and close to the level of 65 per cent in 2003.

As in previous years, the main reason for dissatisfaction was the long time taken to repair the fault. Similarly, the main reason for satisfaction remains the fact that the fault had been fixed, or the good quality of the repair.

Among customers who had arranged an appointment with a technician or another company representative, the share of those satisfied or very satisfied with the person's punctuality was significantly higher than in 2004, reaching 80 per cent for residential customers and 72 per cent for business customers—compared with 72 and 63 per cent, respectively, in 2004. The overall satisfaction with the technician's punctuality was 79 per cent in 2005, up from 71 per cent in 2004 and 75 per cent in 2003.



Overall satisfaction with fault repairs was highest among remote customers—71 per cent were satisfied or very satisfied; while satisfaction with the technician’s or company representative’s punctuality was highest among urban customers—82 per cent. In 2004, overall satisfaction had been very similar among urban, rural and remote customers at around 68–69 per cent; while satisfaction with the technician’s punctuality had been highest among urban and remote customers at 72 per cent each.

Table 4.5 summarises the overall satisfaction with fault repairs for the past three annual consumer satisfaction surveys.

Table 4.5: Consumer satisfaction with fault repairs, 2003 to 2005

	Year	Residential	Business	Total	Urban	Rural	Remote
Total satisfied	2005	67%	59%	66%	67%	64%	71%
	2004	70%	62%	69%	69%	8%	69%
	2003	67%	53%	65%	65%	66%	66%
Neither satisfied nor dissatisfied	2005	5%	8%	5%	5%	4%	6%
	2004	7%	2%	6%	7%	5%	2%
	2003	6%	4%	6%	6%	5%	7%
Total dissatisfied	2005	26%	34%	27%	26%	31%	23%
	2004	23%	36%	24%	23%	27%	30%
	2003	27%	41%	29%	29%	29%	26%
Don't know/can't say	2005	2%	0%	1%	2%	*	0%
	2004	1%	0%	1%	1%	*	0%
	2003	*	1%	1%	1%	0%	1%

\*Denotes less than one per cent

Source: ACA consumer satisfaction surveys 2003 to 2005

Total satisfied: respondents 'satisfied' or 'very satisfied'

Total dissatisfied: respondents 'dissatisfied' or 'very dissatisfied'

## Findings – connection of services

The proportion of customers satisfied or very satisfied with their new connection or transfer was 79 per cent for residential customers and 66 per cent for business customers, slight decreases when compared with 83 and 68 per cent, respectively, in 2004. The overall satisfaction level was 76 per cent in 2005, down from 82 per cent in 2004 and below the level of 79 per cent in 2003.

As was the case in 2004, the main reason for dissatisfaction in 2005 was when connections or transfers were performed incorrectly, in a faulty manner or not as requested. A lack of problems was the main reason for satisfaction with the connection or transfer in 2005. In 2004, a short time to connect or transfer the phone had been the main reason for satisfaction.

Among customers who had arranged an appointment with a technician or another company representative, the share of those satisfied or very satisfied with the person’s punctuality was 73 per cent for residential customers and 79 per cent for business customers, slight increases when compared to 71 and 77 per cent, respectively, in 2004. The overall satisfaction level was 75 per cent in 2005, up from 72 per cent in 2004 and 71 per cent in 2003.

Table 4.6 summarises the level of overall satisfaction with service connection for the past three annual consumer satisfaction surveys.

Table 4.6: Consumer satisfaction with connection of services, 2003 to 2005

	Year	Residential	Business	Total	Urban	Rural	Remote
Total satisfied	2005	79%	66%	76%	76%	77%	68%
	2004	83%	68%	82%	82%	80%	86%
	2003	80%	62%	79%	78%	80%	88%
Neither satisfied nor dissatisfied	2005	7%	14%	8%	8%	7%	3%
	2004	4%	5%	4%	5%	4%	3%
	2003	4%	5%	4%	4%	3%	2%
Total dissatisfied	2005	14%	20%	15%	15%	16%	27%
	2004	13%	27%	14%	13%	15%	11%
	2003	15%	32%	17%	17%	17%	10%
Don't know/can't say	2005	1%	0%	0%	0%	0%	1%
	2004	0%	0%	0%	0%	1%	0%
	2003	0%	1%	0%	0%	1%	0%

Source: ACA consumer satisfaction surveys 2003 to 2005

Total satisfied: respondents 'satisfied' or 'very satisfied'

Total dissatisfied: respondents 'dissatisfied' or 'very dissatisfied'

## 4

### TELECOMMUNICATIONS INDUSTRY OMBUDSMAN COMPLAINTS

The role of the TIO in the resolution of complaints made by telecommunications customers, including the interpretation of complaint data, is discussed in Chapter 3.

As shown in Table 4.7, there were 44,559 complaints relating to fixed line telephone services made to the TIO during 2004–05, a 23.2 per cent increase over the 36,167 complaints received during 2003–04.

Billing remains the TIO's largest area of complaint for fixed line services, followed by customer service and credit control.

Billing complaints relating to international data services were a major contributor to overall billing complaints, while fluctuating considerably from quarter to quarter during the year. (Complaints about international data services, including complaints about internet diallers, are discussed in Chapter 3.) In general, the increase in complaints about fixed line services was particularly marked in the June 2005 quarter.

Most areas of complaint have increased over the past two years. In 2004–05, the 23.2 per cent increase in fixed line complaints was the result of some large increases in complaint areas:

- customer service (72 per cent increase)—mainly a failure to action requests and inadequate or incorrect advice;
- churn (48 per cent increase)—including unauthorised churn resulting from telemarketing;
- privacy (135 per cent increase)—including complaints about repeated telemarketing by CSPs;
- contracts (145 per cent increase)—including allegedly incorrect or inadequate advice at the point of sale; and
- disconnection (70 per cent increase).

Table 4.7: Fixed line complaints received by the TIO, 2002–03 to 2004–05

Issue	Number of complaints		
	2002–03	2003–04	2004–05
Billing	14,519	12,998	13,558
Customer service	5,381	4,451	7,649
Credit control	4,317	5,528	5,787
Churn	3,287	3,043	4,514
Faults	3,022	3,676	3,725
Provision	2,704	2,697	2,854
Privacy	1,003	908	2,135
Contracts	602	563	1,381
Directories	853	790	957
Disconnection	700	522	888
Land access	546	469	498
Phone card/smart card	133	393	463
Porting	72	70	98
Payphones	42	36	38
Disability services	25	23	14
Total	37,206	36,167	44,559

Source: TIO

# chapter 5

## CHAPTER 5: MOBILE TELECOMMUNICATIONS SERVICES

5

Highlights and overview	69
Mobile phone penetration rates	70
Carrier networks	71
<i>Network evolution</i>	71
<i>Network development</i>	72
Mobile handsets	76
Market shares	77
Carriage service providers	79
Text and data applications	79
Outcomes for consumers	80
<i>Proportions of pre-paid and post-paid accounts</i>	81
<i>Price movements</i>	82
<i>Network expansion and satellite phone subsidies</i>	83
<i>TIO complaints</i>	85
<i>Network drop-out and congestion</i>	86
<i>Access for people with hearing or vision impairment</i>	87
<i>M-commerce</i>	89
Content services	89
Premium rate mobile content services	91
<i>Protecting customers from high bills</i>	91
<i>Content regulation</i>	92
<i>Potential problems with premium services</i>	94
Industry initiatives	95
<i>Lost and stolen mobile phones</i>	95
<i>Social impact of mobile phones</i>	95
<i>Use of mobile phones in schools</i>	96
<i>Mobile phone recycling</i>	97

## CHAPTER 5: MOBILE TELECOMMUNICATIONS SERVICES

### HIGHLIGHTS AND OVERVIEW

The mobile telecommunications industry is a fast-growing and increasingly significant part of the Australian telecommunications sector. The major network, service and social developments relating to the mobile industry during 2004–05 are discussed in this chapter.

Strong growth in mobile services over the past 10 years has been driven by competition, innovation and a focus on meeting customer needs. The 2004–05 reporting period saw continued growth and significant developments in mobile phone services. Some of the key results and developments were as follows:

- There was continued strong growth of 12 per cent in subscriber numbers in 2004–05 and 11 per cent in revenue, passing 18.4 million and \$9.1 billion respectively.
- The average revenue per customer decreased by 1.4 per cent in the 12 months to 31 March 2005—revenue for business customers decreased by 4.8 per cent, whereas it increased by 4.6 per cent for residential post-paid customers.
- Call volumes increased by 12 per cent in the 12 months to 31 March 2005, ranging from one per cent for residential post-paid customers to 21 per cent for business customers.
- Revenue per call minute decreased by two per cent in the 12 months to 31 March 2005, ranging from a nine per cent decrease for business customers to a seven per cent increase for residential post-paid customers.
- Third generation (3G) network sharing was commenced, with Hutchison and Telstra forming one partnership and Optus and Vodafone the other.
- Take-up of Hutchison’s 3G mobile phone service remained strong throughout the year, with services more than doubling from 238,000 to 532,000 at the year’s end and average revenue per user remaining relatively high at \$84 per month.
- Strong growth in the sale of mobile handsets continued, with annual sales of 7.7 million handsets, up from 7.1 million in the previous year.
- Pre-paid accounts continued to grow strongly, comprising 51 per cent of second generation (2G) retail accounts, up from 48 per cent in the previous year. There were 8.5 million pre-paid retail customers at 30 June 2005.
- Short message service (SMS) use increased by 33 per cent from 2003–04, with 6.74 billion SMS messages sent—up from 5.08 billion. Usage was encouraged by an increasing range of 19x premium rate mobile services, such as voting on interactive TV shows, downloading of ringtones and SMS ‘chat’.
- The need for closer regulation of premium rate mobile services—particularly avoidance of unexpected high bills and the protection of minors from inappropriate content—were strong areas of regulatory focus during the year.

5

## MOBILE PHONE PENETRATION RATES

There were 18.4 million mobile phone services in operation in Australia at 30 June 2005, up from 16.5 million at 30 June 2004, an increase of 12 per cent from the previous year. The addition of 1.9 million services to June 2005 was a slightly smaller increase than the 2.2 million over the preceding year, but represents continuing strong growth, especially in pre-paid services. There were 8.5 million pre-paid retail services at the year's end.

Table 5.1 shows that, despite the strong growth in mobile numbers, the growth rate is starting to decline. One reason for this might be the culling by network operators of inactive pre-paid accounts, with operators moving towards a standardised protocol of retiring pre-paid accounts that have been inactive for more than 60 days. Another reason is the approach towards natural saturation, where everyone who wants a mobile phone has one, with further growth achieved through individuals having multiple accounts. The penetration rate of mobile services may pass 100 per cent by the end of 2006.

Table 5.1: Mobile services in operation and percentage increase, 1999–00 to 2004–05

Year	No. of services (millions)	Percentage increase	Penetration (percentage of population)
1999–00	8.0	26%	42%
2000–01	11.1	39%	57%
2001–02	12.7	14%	65%
2002–03	14.3	13%	72%
2003–04	16.5	15%	82%
2004–05	18.4	12%	90%

Source: *Mobile carriers*

Australia was an early adopter of mobile phones through its nationwide analog network, but in recent years mobile subscriber numbers in countries of the Asia–Pacific region and the European Union have been growing at a faster rate than Australia.

A BIS Shrapnel report published in March 2005, *Cellular forecast (Asia–Pacific) 2005–2010*, shows that at December 2004, Australia was fourth in the Asia–Pacific region with a penetration rate of 88 per cent, behind Hong Kong (107 per cent), Taiwan (103 per cent) and Singapore (89 per cent). At the end of 2004, there were 668 million mobile phone customers in the region, 50 per cent of whom were in mainland China, with an annual growth rate of 20 per cent. There was an average penetration rate of 22 per cent across the Asia–Pacific region.

As an indication of the potential level that Australia's mobile penetration might reach in the medium term, the highest mobile penetration rates in the world are in Hong Kong and Sweden, which were both marginally higher than 110 per cent at June 2005.

Analysis of penetration rates by Ovum ranked Australia about twentieth worldwide, behind countries in Western Europe, Hong Kong, Taiwan, the United Kingdom and Israel for mobile phone penetration at December 2004. Mobile penetration in the European Union was around 90 per cent and is expected to reach 100 per cent in 2006. This reflects the ubiquity of mobile telephony in the European Union using the GSM technology platform. The United States and Canada have much lower penetration rates than Australia (65 per cent and 50 per cent respectively at 30 June 2005).

While the number of mobile phone services is continuing to grow in Australia, the number of fixed line telephone services is marginally declining, reflecting the increasing price competitiveness of mobile phones and the utility that consumers perceive in mobile services.

A May 2005 Internet Data Centre (IDC) report—*No strings attached: Australian cellular forecast and analysis, 2004–2009*—asserts that Australia’s mobile phone penetration rate has reached ‘saturation point’, in the sense that those people who desire a mobile phone have one. It argues that new competitive dynamics will begin to take effect:

By exceeding ‘natural saturation’, the industry is entering a new phase of competition characterised by market maturity, forcing carriers to reposition and further differentiate themselves.

Continuing growth in the mobile phone penetration rate is expected to arise from consumers choosing to have several mobile accounts, such as for professional or personal use, for business-hours and out-of-hours use, to take advantage of time-specific pricing plans, and for use in predominantly voice or text/data communications.

The IDC report predicts that growth in the Australian mobile phone industry will soon move to 3G products and services, with 3G users comprising one-third of the market and non-voice revenue constituting almost 30 per cent of total revenue by 2009. It predicts that non-voice revenue will pass \$2 billion in 2006.

## CARRIER NETWORKS

# 5

### Network evolution

The GSM and CDMA networks introduced into Australia respectively in 1993 and 1999 are known as second generation (2G) networks. The data-carrying capacity of both types of network has been substantially enhanced in recent years through the introduction of general packet radio service (GPRS) technology for GSM networks and CDMA2000 single carriage radio transmission technology (1xRTT) for the Telstra CDMA network. Following these enhancements, these networks are now referred to as 2.5G networks.

Australia’s three GSM networks have all had GPRS capability since 2002–03, enabling typical 56 kilobit per second (kbit/s) packetised data transfer rates. The network operators all offer content services which exploit this 2.5G network capability. In 2004–05, Telstra finalised the deployment of CDMA2000 1xRTT on its CDMA network, which provides packetised data transfer rates of up to 144 kbit/s.

In late 2004, Telstra commenced the next stage of its CDMA network upgrade to CDMA2000 1xEvDO, which should enable typical data rates of between 300 and 600 kbit/s. The upgrade is expected to cover the major capital cities by the end of the 2005 calendar year, and effectively converts Telstra’s CDMA network into a 3G network. In other words, it will be able to provide mobile broadband service access to customers using CDMA2000 compatible mobile phones as well as PDAs and PCs equipped with a network access card.

Although not generally known in Australia as a 3G mobile phone technology platform, the CDMA 1xEvDO platform technology is compatible with the CDMA2000 3G technology platform. Currently, the network transmits data only and not voice traffic, but its overlay on Telstra’s CDMA network positions it as an important wireless technology for regional and rural Australia. This means that Telstra in effect has two 3G networks: the WCDMA network it shares with Hutchison and its CDMA2000 network.

The Australian 3G networks using the wideband CDMA (WCDMA) technology platform cannot implement it as an overlay on the existing 2.5G networks because they use a different data coding algorithm and data transmission technology. Separate network rollouts have been required. During 2004–05 Hutchison continued to deploy its ‘3’ network; but there were important announcements during the year, foreshadowing the rollout of two shared 3G networks in Australia as follows:

- Telstra and Hutchison—on 4 August 2004, Telstra and Hutchison announced their agreement to jointly own and operate Hutchison’s existing 3G radio network and to fund future network development. Under the agreement, the network becomes the core asset of the joint enterprise. The partners will conduct their retail 3G businesses independently and in competition with each other.
- Optus and Vodafone—on 26 August 2004, Optus and Vodafone announced their joint venture agreement to share 3G network sites and radio infrastructure across Australia. Under the agreement, they will work together to build and operate a joint national 3G radio network infrastructure. They will continue to compete for customer business and provide separate customer services.

In May 2005, Optus launched its 3G mobile telephone service, initially available only to customers in the Australian Capital Territory. Originally targeting business and corporate customers, the service is expected to be launched in the major Australian capital cities during the fourth quarter of 2005.

### Network development

At 30 June 2005, Australia was served by seven cellular networks, although the newest network, built by an Optus–Vodafone partnership, was only launched in May 2005 in Canberra and was not fully operational at the year’s end. These networks were as follows:

- Three 2G national GSM networks are operated by Telstra, Optus and Vodafone using frequencies in the 900 MHz and 1800 MHz bands. As discussed in the preceding section, each network supports GPRS that can support up to 56 kbit/s data rates.
- Two 2G CDMA networks are operating in the 800 MHz band. The first, operated by Telstra, has the largest geographic and population coverage of all cellular networks in Australia. The second, operated by Hutchison Orange, has service beyond its native coverage areas of major urban and regional centres in Melbourne and Sydney enhanced by roaming supplied by Telstra. The Telstra CDMA infrastructure was upgraded during the year with 1xRTT and offers access data rates of up to 144 kbit/s. A further upgrade to CDMA2000 compatibility, giving 3G capability, was commenced and is due for completion in major capital cities by the end of 2005.
- One 3G WCDMA network is being shared by Hutchison 3 and Telstra using frequencies in the 2.1 GHz band. This high-speed network supports multimedia communications (voice, video and data) at speeds of up to 2 Megabits per second (Mbit/s) for stationary access or 384 kbit/s for mobile access. The ‘3’ network is available in Adelaide, Brisbane, Melbourne, Perth, Sydney and the Gold Coast, with roaming outside those cities at reduced data rates provided by Telstra’s GSM network (this roaming was provided by Vodafone until March 2005). Shortly after the end of the reporting period, the ‘3’ network was extended to Canberra and the Telstra service was launched in September 2005.
- A second 3G WCDMA network using the same frequency band and with comparable data throughput characteristics is to be shared by Optus and Vodafone. The network carries the new Optus 3G service, launched in Canberra in May 2005, and the Vodafone service, for which testing has commenced.



Complementing these terrestrial networks are mobile satellite services including Iridium, Globalstar, Mobilesat and Inmarsat. By covering the whole of Australia in their footprint, these satellite services provide access to mobile communications for consumers living outside the coverage areas of the terrestrial mobile networks.

Table 5.2: Terrestrial mobile networks operating during 2004–05

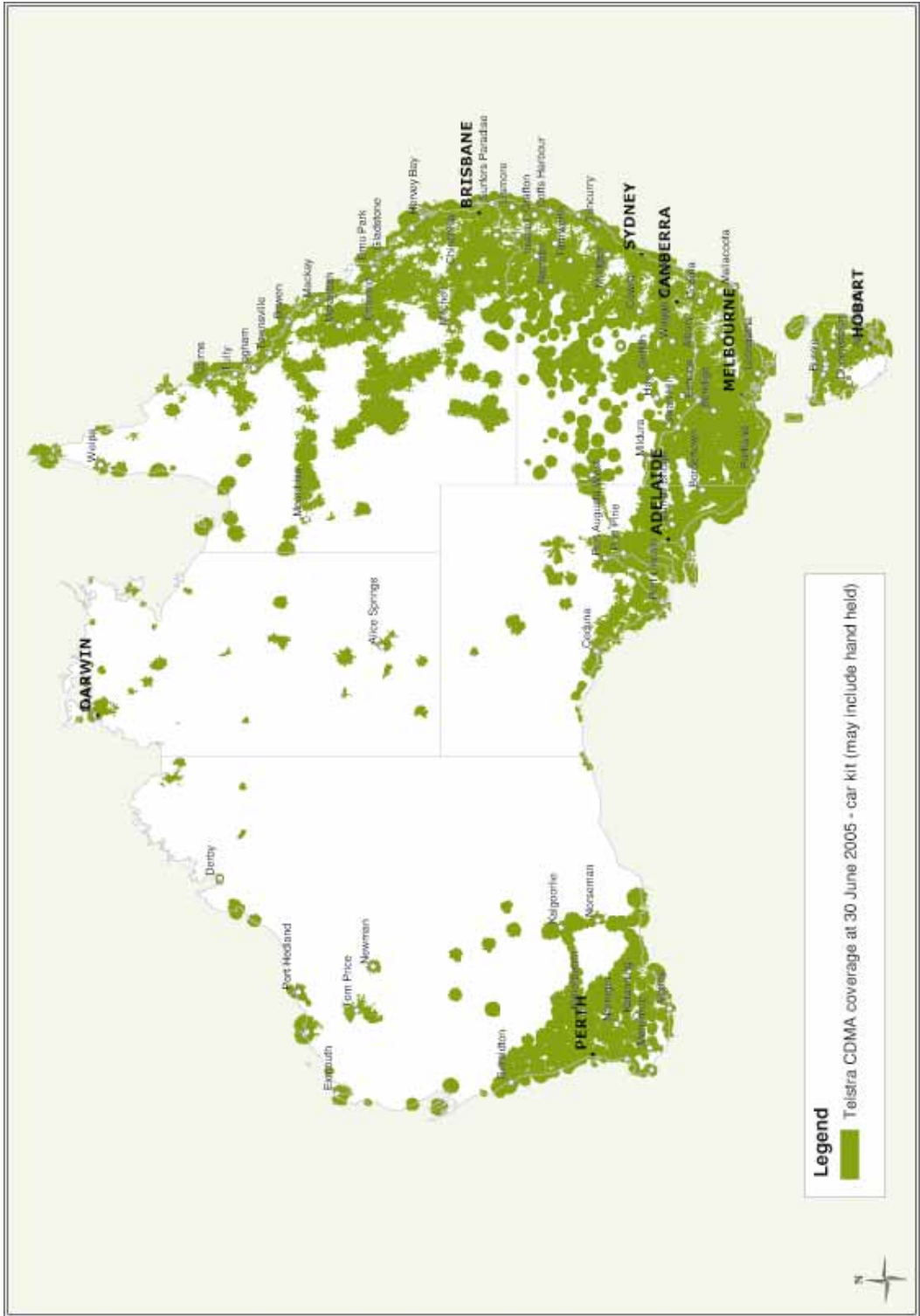
Carrier	Network	Launch date	Coverage/% of population	Mobile services at 30 June 2004 ('000s)	Mobile services at 30 June 2005 ('000s)	Year on year % change
Telstra	GSM	1993	96%	6,659	6,923	4.0%
	CDMA	2000	98%	1,006	1,394	38.6%
Optus	GSM	1993	96%	5,689	5,989	5.3%
Vodafone	GSM	1993	95%	2,498	3,167	26.8%
Hutchison	CDMA (Orange)	2000	54%	386	418	8.3%
	WCDMA ('3')	2003	44%	238	532	123.5%
Total				16,476	18,423	11.8%

Source: Mobile carriers

Figures 5.1 and 5.2 are indicative maps of CDMA and GSM network coverage across Australia at 30 June 2005.

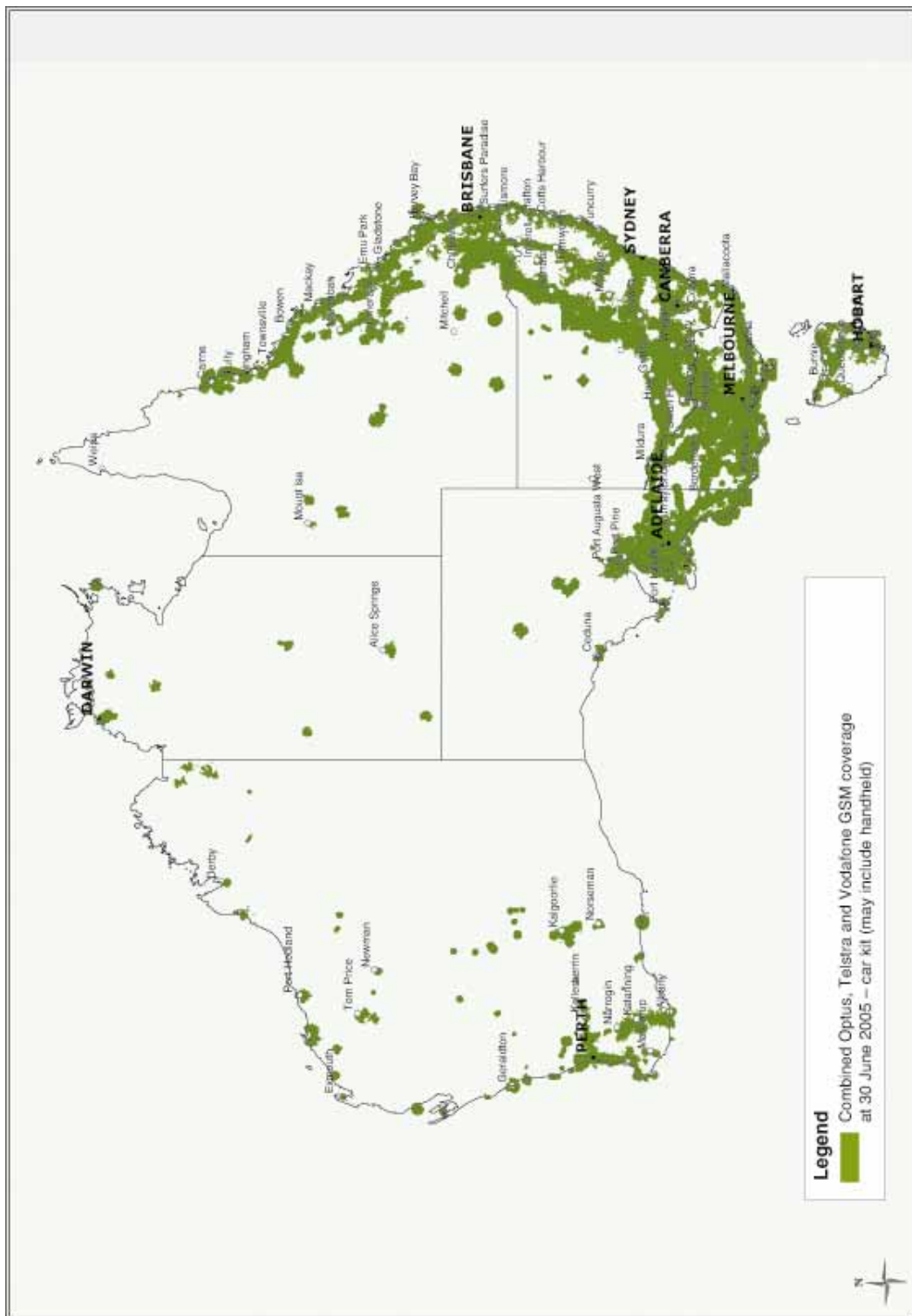
Based on information from mobile carriers, the combined land area of Australia covered by CDMA networks is around 21 per cent (up from 19 per cent in 2003–04) and for GSM networks remained steady at around eight per cent. The aggregated population coverage in Australia in 2004–05 exceeded 98 per cent for CDMA and 96 per cent for GSM. GSM population coverage is unchanged since 2002–03.

Figure 5.1: Telstra CDMA mobile network coverage, 30 June 2005



5

Figure 5.2: Combined Optus, Telstra and Vodafone GSM mobile network coverage, 30 June 2005



## MOBILE HANDSETS

During 2004–05, there were 7.7 million mobile phone handsets sold in Australia, up from 7.1 million in the previous year. As shown in Table 5.3, this maintains a high rate of handset replacement, although the growth rate was less than from 2002–03 to 2003–04. The high replacement rate is likely to continue as the cost of handsets reduces and the availability of premium data and video services increases.

The major drivers for the overall increase in mobile handset sales are:

- the growth in pre-paid services, where a handset may be offered as part of the sale package;
- technological developments, which provide incentives for consumers to upgrade their handsets; and
- post-paid contracts that include a phone for little or no upfront charge.

Table 5.3: Mobile handset sales, 2002–03 to 2004–05

Handsets sold (millions)	2002–03	2003–04	2004–05
CDMA	0.4	0.6	0.7
GSM*	4.5	6.5	7.0
Total	4.9	7.1	7.7

\*Includes 3G handsets

Source: Australian Mobile Telecommunications Association

The market research firm Gartner estimates that almost 750 million mobile phone handsets will be sold worldwide in 2005, a 13 per cent increase over calendar year 2004. BIS Shrapnel found in its *Cellular Forecast (Asia Pacific) 2005–2010* that 242 million new mobile phone handsets were sold in the Asia–Pacific region during the 2004 calendar year, of which 7.4 million were sold in Australia.

A second BIS Shrapnel report published in May 2005, *Cellular Handset User Survey (Australia)*, provides interesting insights into mobile phone users' attitudes, satisfaction levels, buying behaviour and handset usage patterns based on a sample survey of 250 people. The survey findings included the following:

- Fifteen per cent of mobile phone customers have more than one phone. Reasons given for multiple phone ownership were: to separate work and personal use, to optimise usage between complementary plans, to separate voice and data usage, and to get CDMA coverage when in rural areas.
- The average upfront cost to customers of a mobile phone was \$300, with 39 per cent of customers paying less than \$150 and only six per cent paying more than \$700. Prices are kept artificially low due to handset subsidies by network operators. On the other hand, there is a growing polarisation of handsets between low-end units, emphasising voice and SMS connectivity, and premium models optimised for value-added services, such as video, music and games.
- The replacement rate of handsets is high, and appears to be increasing. Customers retain their handset for almost 2.5 years on average, with two-thirds of handsets being less than 18 months old at any given time and 50 per cent being replaced within two years.
- 87 per cent of customers were satisfied with their handsets, including 20 per cent who were very satisfied. The main satisfactory features were voice quality (97 per cent), and size and weight (93 per cent). Areas of satisfaction where room for improvement was identified were menus (73 per cent) and battery life (81 per cent). Low-end users were disappointed with data handling (typically teenagers) and with their screens (typically older people). On the other hand, high-end users were dissatisfied with the size and weight of their handsets, and frequently made minimal use of many of their handset features.

The survey also found that:

- The mobile phone penetration rate for people with incomes below \$25,000 was 68 per cent, compared with an average rate of almost 90 per cent across all income groups.
- Among customers with post-paid contracts there is a strong preference for low-cost handsets over low-cost calls.
- The rapid growth of pre-paid accounts reflects their popularity among people under thirty who are either students or employed part-time.
- The top three network selection criteria were: a free phone provided with the contract (21 per cent), call rates (19 per cent) and network coverage (17 per cent).
- While younger and older users both gave priority to call charge rates, younger users (under 30) also emphasised handset subsidies and older users (over 60) also gave priority to particular recommendations from their children and friends.
- Twenty-four per cent of customers spend \$30–40 each month, whereas 14 per cent of them spend more than \$88 monthly.
- Average mobile phone customers make almost five calls per day, with seven per cent of customers making more than 10 calls daily.

In terms of handset ownership, BIS Shrapnel identified Nokia as the clear leader in Australia, with a 64 per cent market share. Motorola followed at 14 per cent, with Sony Ericsson next at nine per cent. However, Nokia's hold on the Australian market appears to be declining. *The Australian* reported on 28 June 2005 that over the past two years, based on purchase data, the Nokia market share in Australia has fallen from 70 to 35 per cent, with strong competition from Motorola (23 per cent), Samsung (17 per cent) and Sony Ericsson (10 per cent).

5

## MARKET SHARES

Telstra maintained its lead in market share during 2004–05 for both revenue and customers, although competition was fierce and Vodafone and Hutchison both made up ground. All operators used capped call plans as a means to attract new customers and retain existing ones. All operators, apart from Hutchison, heavily promoted pre-paid accounts as a means of attracting new customers.

Table 5.4 shows customer numbers at 30 June for the past three years, including net changes in customer numbers as derived figures through year-to-year comparisons. A net change in customer numbers accounts for new customers signed up by the network operator, customers relinquishing a mobile phone account or moving to an alternative network operator, and discontinued customer accounts such as pre-paid accounts that have been inactive for more than 60 days. The figures in Table 5.5 are derived from those in Table 5.4 as percentages, which express market shares for customer numbers and net customer number changes throughout the year.

Telstra remained clearly the biggest mobile phone service carrier in Australia in 2004–05, with a total of 8.317 million mobile phone services across its GSM and CDMA networks. Among the 2G networks, the subscriber growth rate was strongest for Telstra's CDMA network (38.6 per cent) followed by Vodafone (26.8 per cent). Customer numbers on Hutchison's 3G network grew by 123.5 per cent from a low customer base at the start of the year. Subscriber growth was weakest for the two largest networks—the Telstra GSM network (4.0 per cent) and Optus (5.3 per cent). These results compared with an overall customer growth rate of 11.8 per cent for the year.

Telstra's market share of customers was 45.1 per cent, which was slightly down on its 46.5 per cent market share in the previous year. The market share for Optus of 32.5 per cent was a slight decrease on the previous year, whereas Vodafone, with a 17.2 per cent market share, showed a small increase reversing the trend of the previous year. Hutchison's market share increased to 5.2 per cent through customer growth on its '3' network. The market share of net customer growth was strongest for Vodafone with 34.4 per cent and for Telstra with 33.5 per cent for its GSM and CDMA networks combined, and weakest for Hutchison Orange with 1.6 per cent.

Table 5.4: Increase in customer numbers for mobile carriers, 2002–03 to 2004–05

Carrier	2002–03		2003–04		2004–05		
	Net new customers (millions)	Services in operation (millions)	Net new customers (millions)	Services in operation (millions)	Net new customers (millions)	% change	Services in operation (millions)
Telstra GSM	0.33	5.77	0.89	6.659	0.264	4.0%	6.923
Telstra CDMA	0.20	0.80	0.21	1.006	0.388	38.6%	1.394
Telstra total	0.53	6.57	1.10	7.665	0.652	8.5%	8.317
Optus	0.63	4.87	0.82	5.689	0.300	5.3%	5.989
Vodafone	0.45	2.59	-0.09	2.498	0.669	26.8%	3.167
Hutchison Orange	0.04	0.28	0.10	0.386	0.032	8.3%	0.418
Hutchison 3	0.02	0.02	0.22	0.238	0.294	123.5%	0.532
Hutchison total	0.06	0.30	0.32	0.624	0.326	52.2%	0.950
Total	1.67	14.33	2.15	16.476	1.947	11.8%	18.423

Source: Mobile carriers

Table 5.5: Market shares of customers for mobile carriers (percentages), 2002–03 to 2004–05

Carrier	2002–03		2003–04		2004–05	
	New customers %	Services %	New customers %	Services %	New customers %	Services %
Telstra GSM	19.8	40.3	41.4	40.4	13.6	37.6
Telstra CDMA	12.0	5.6	9.8	6.1	19.9	7.6
Telstra total	31.7	45.8	51.2	46.5	33.5	45.1
Optus	37.7	34.0	38.1	34.5	15.4	32.5
Vodafone	26.9	18.1	-4.2	15.2	34.4	17.2
Hutchison Orange	2.4	2.0	4.7	2.3	1.6	2.3
Hutchison 3	1.2	0.1	10.2	1.4	15.1	2.9
Hutchison total	3.6	2.1	14.9	3.8	16.7	5.2

Source: Derived from Table 5.4

## CARRIAGE SERVICE PROVIDERS

Telstra, Optus, Vodafone and Hutchison are all mobile telephony carriage service providers (CSPs) as well as being network operators. The mobile phone service market also includes resellers of mobile services, mobile virtual network operators (MVNOs) and retailers.

According to the Allen Consulting Group September 2005 report—*Australian Mobile Telecommunications Industry: Economic Significance*—there were almost 90 resellers in the Australian market operating during 2004–05. Examples of resellers in Australia include: Primus Mobile (Telstra), SIMplus (Optus) and BDigital (Optus). While resellers are regarded as CSPs, they do not normally own network infrastructure or have a spectrum allocation. Instead, they purchase end-to-end mobile services from the mobile network operators and bill customers in their own names.

MVNOs have some characteristics of mobile network carriers and resellers. They are also regarded as CSPs. They use an existing mobile network to sell a service, but also have a technical support layer that replicates the carrier's mobile switching centre and enables the operator to have greater access to customer information. Virgin Mobile and AAPT are MVNOs that purchase wholesale mobile capacity from Optus and Vodafone respectively. One of the factors underpinning the emergence and growth of MVNOs is their ability to use existing networks and thus avoid the capital investment required to build their own network.

Retailers sell mobile phones and mobile phone services, accessories, SIM cards and pre-pay cards. They may be specialist telephone outlets such as Crazy John's or Phone Zone, or part of a general electronics retailer or department store such as Dick Smith, Harvey Norman or Myer. These retailers do not normally have ongoing relationships with their customers outside of warranty services for handsets and technical advice.

5

## TEXT AND DATA APPLICATIONS

The use of mobile text and data applications by Australian consumers continued to expand in 2004–05. SMS remained the most popular non-voice application for mobile phone users, although consumers are also using other data applications such as internet content configured for mobile handsets, exchanging emails and photos, and downloading ringtones and games.

Except for SMS, Australian consumer mobile data applications usage does not rank highly in international comparisons. AT Kearney's *Mobinet Index # 7* (July 2004) found that 36 per cent of surveyed Australian mobile phone users owned an internet-enabled phone. This was below the global average of 47 per cent and well below the highest ranking countries surveyed—South Korea (83 per cent), Japan (79 per cent) and Germany (63 per cent). Reasons for the comparatively slower take-up of data application services other than SMS in Australia are thought to be partly behavioural (consumers are not yet accustomed to using mobile handsets to access information while mobile) and partly cost-related. Ownership of an internet-enabled phone indicates a customer's propensity to use data services but does not give a reliable guide to subsequent take-up.

The *Mobinet Index # 7*, which surveyed 5,800 mobile phone users in 15 countries, including 387 Australian mobile phone users, provides some insight into the applications that are driving Australian consumer take-up of mobile data application services. It reported that, of those Australian consumers using data services surveyed, 'general access or email' was the most common reason (31 per cent) for using mobile data services, followed by 'downloading games' (21 per cent) and 'viewing pictures or videos' (20 per cent).

The *Mobinet Index # 7* reported that 85 per cent of surveyed mobile phone users in Australia used SMS. This was the third highest usage rate behind South Korea (89 per cent) and China (87 per cent). The continued growth in the use of SMS has been stimulated by an expanding array of SMS applications in the messaging market, such as SMS-voting, other TV interactive applications, ticket-purchasing for airlines and events, premium content services and SMS chat services.



The growth in SMS usage remained strong. There were 6.736 billion SMS messages sent during 2004–05, up from 5.078 billion in 2003–04, a 33 per cent increase from the previous year. SMS continues as an important sector of revenue growth. ACIL Tasman estimates that SMS revenue was up 21 per cent from the previous year, emphasising the very strong growth in premium SMS and multimedia messaging service (MMS) usage. The fact that the revenue increase was lower than the volume growth in SMS messages also points to the consumer benefit of reduced call costs as a result of strong price competition.

SMS has been available in Australia since 1993, but interconnection between networks was not achieved until April 2000. Table 5.6 shows that, since 2000, the use of SMS continued to increase significantly, rising by at least 28 per cent each year.

Australians sent 49.8 million messages using a MMS in 2004–05, up from 13.7 million in the previous year. While MMS usage is very small by comparison with SMS, the 2004 *Mobinet Index # 7* reported that 50 per cent of Australian camera phone owners use MMS at least once a month, compared with a global average of 47 per cent. An example of the influence of competition in MMS pricing before the reporting period was when Virgin Mobile reduced the charge for sending an MMS between its customers to the rate for sending an SMS (25 cents) in March 2004. The reduced charge was aimed at stimulating take-up among younger consumers, who are typically early adopters of new telecommunications technologies.

Table 5.6: Number of SMS and MMS messages, 2000–01 to 2004–05

Year	2000–01	2001–02	2002–03	2003–04	2004–05
SMS messages (millions)	1,916	2,749	3,952	5,078	6,736
MMS messages (millions)	–	–	–	13.7	49.8

Source: *Mobile carriers*

## 5

### OUTCOMES FOR CONSUMERS

Indicators of outcomes for consumers from the use of mobile services discussed in this section are:

- proportions of pre-paid and post-paid accounts;
- price movements;
- network expansion and satellite phone subsidies;
- complaints to the Telecommunications Industry Ombudsman (TIO);
- network drop-out and congestion rates;
- access by people with hearing or vision impairment; and
- m-commerce.

Positive highlights were the increase in pre-paid accounts, giving customers greater flexibility and control over their spending; and lower unit costs for mobile communications. In particular, mobile phone bills were lower on average, whereas the average minutes of use increased. On the negative side, there was an increase in customer complaints to the TIO. All of the major complaint categories increased significantly, and terms and conditions of premium mobile services emerged as a significant source of customer complaints.



## Proportions of pre-paid and post-paid accounts

More customers using 2G services chose pre-paid than post-paid mobile phone services in 2004–05, continuing the trend since 2001. At 30 June 2005, 51 per cent of retail customers with 2G services had pre-paid services—up from 48 per cent at 30 June 2004. The 19.5 per cent increase in pre-paid customers is significantly higher than the overall growth rate of 10 per cent in 2G customers for the year. Vodafone led the way with pre-paid service access, with 71 per cent of its retail customers opting for pre-paid accounts, whereas only 10 per cent of customers of Hutchison 3 and Orange services have pre-paid accounts.

Many consumers favour pre-paid services since they give them more control over their mobile phone service expenditure and the ability to avoid lengthy contracts. Pre-paid accounts are especially popular with students and other people with low incomes as they help them to manage their budgets and avoid getting into debt.

Hutchison is no longer pursuing pre-paid customers with the same intensity as its competitors. Hutchison's statement to the Australian Stock Exchange of 16 August 2005 advised that: 'Net customer growth in the reported period predominantly reflects the Company's strategic pull back from pre-paid acquisition in the 3 business and a move away from post-paid acquisition in Orange.' In other words, Hutchison is not pursuing pre-paid customers on its '3' network, where growth is high, but is continuing to pursue pre-paid customers on its Orange network, where growth is much lower.

Table 5.7 shows a breakdown of pre-paid and post-paid customer numbers for the four mobile network operators. Wholesale customer numbers are not shown in the table as the pre-or post-paid status of these customers is uncertain—whereas to the retailer they may show as pre-paid customers, to the wholesaler they will show as post-paid customers. Accordingly, the total of pre-paid and post-paid retail customer numbers in Table 5.7 is 16.5 million at 30 June 2005, rather than the 18.4 million mobile subscriber numbers quoted elsewhere in this report.

Table 5.7: Pre-paid and post-paid retail customers, 30 June 2005

Mobile carrier	Account type	GSM	CDMA	Total
Telstra	Pre-paid	3,094,107	475,912	3,570,019
	Post-paid	3,808,213	856,799	4,665,012
Optus	Pre-paid	2,789,344	–	2,789,344
	Post-paid	2,062,917	37,004	2,099,921
Vodafone	Pre-paid	2,052,610	–	2,052,610
	Post-paid	928,390	–	928,390
Hutchison Orange	Pre-paid	–	92,000	92,000
	Post-paid	–	326,000	326,000
Total	Pre-paid	7,936,061	567,912	8,503,973
	% pre-paid	54%	32%	51%
	Post-paid	6,799,520	1,219,803	8,019,323
	% post-paid	46%	68%	49%
Total	Combined totals	14,735,581	1,787,715	16,523,296

Source: Mobile carriers

## Price movements

ACIL Tasman's 2005 report, *Consumer Benefits Resulting from the Australian Telecommunications Sector*, (for a summary, see Chapter 2: Consumer Benefits) found that the retail mobile telecommunications industry generated \$9.1 billion in the 12 months to 31 March 2005, an 11.1 per cent increase on the previous 12 month period. The industry is now larger than either the free-to-air television or newspaper printing and publishing industries. Mobile phone revenue is set to surpass fixed-line telephone revenue in 2005–06.

The percentage increase in call revenue was slightly lower, at 9.6 per cent, than the 11.1 per cent increase in total revenue, illustrating tighter margins due to intensified competition. Whereas for the 2004–05 year, usage increased by 1.5 per cent for Telstra customers to 68 minutes per month, the corresponding increase for Optus customers was 16 per cent to 94 minutes per month.

Telstra reported to the Australian Stock Exchange that as at 30 June 2005 it remained the market leader in customer numbers and mobile services revenue. Its total mobile revenue during 2004–05 was \$4.1 billion, an 8.3 per cent increase on the previous year. This figure includes wholesale and handset revenues. Access fees and call revenue increased by only 4.4 per cent, despite increases of 8.2 per cent in the number of services in operation and 9.8 per cent in the number of call minutes—further illustrating the influence of competitive pressures on this market.

Table 5.8 shows changes in mobile revenue, customer numbers and revenue per customer in 2004–05 for business and residential pre- and post-paid mobile phone customers. The average revenue per mobile phone customer over the 12 months to 31 March 2005 reduced by 1.4 per cent.

Table 5.8: Change in mobile revenue, customer numbers and revenue per customer in 2004–05

	Change in call revenue	Change in call minutes	Change in unit revenue
Residential pre-paid	14.0%	16.4%	-2.1%
Residential post-paid	9.8%	5.0%	4.6%
Business	10.0%	15.6%	-4.8%
Total	11.1%	12.6%	-1.4%

Source: ACIL Tasman, November 2005

Note: Data is for 12 months to 31 March 2005

Table 5.9 shows changes in revenue and traffic (measured in call minutes) in the 12 months to 31 March 2005. Call volumes increased by 11.7 per cent during this period.

Table 5.9: Change in call revenue, call minutes and revenue per call minute in 2004–05

	Change in call revenue	Change in call minutes	Change in unit revenue
Residential pre-paid	13.2%	14.8%	-1.4%
Residential post-paid	8.6%	1.3%	7.2%
Business	10.0%	20.6%	-8.8%
Total	9.6%	11.7%	-1.8%

Source: ACIL Tasman, November 2005

Note: Data is for 12 months to 31 March 2005

The trends of a reducing average mobile phone bill and reducing call charges, compared with increasing fixed-line rental charges, combined with the advantages of mobility and expanding service functionality of mobile phones, are factors driving the fixed-to-mobile substitution of services.

Table 5.10 shows that average revenue per user (ARPU) tended to decrease in 2004–05 compared with the previous year. Only Telstra's post-paid customer segment showed an ARPU increase. Based on available data Telstra's pre-paid customers had the lowest ARPU, whereas Hutchison 3 (consisting of mostly post-paid accounts) had the highest. Of the \$84 ARPU for Hutchison 3, \$16 was derived from non-voice services. ARPU across all networks was around \$45 per month.

Telstra's combined ARPU fell by 3.2 per cent over the year to \$39.33 per month, largely due to the higher proportion of pre-paid services. ARPU from pre-paid customers decreased by 11.6 per cent to \$12.24 per month, whereas ARPU from post-paid customers increased by 3.5 per cent to \$59.06 per month. ARPU from data services increased by 6.7 per cent to \$5.70 per month.

Optus' combined ARPU fell from \$48 per month in 2003–04 to \$46 per month by 30 June 2005. The ARPU gap between Optus pre-paid and post-paid customers was broadly equivalent to that of Telstra customers. ARPU from pre-paid customers decreased from \$22 to \$21 per month, whereas ARPU from post-paid customers decreased from \$70 to \$67 per month. Data revenue as a percentage of service revenue increased by two percentage points to 17 per cent by 30 June 2005.

Table 5.10: Average revenue per user per month, 2003–04 and 2004–05

	Telstra			Optus			Vodafone	Hutchison 3	Hutchison Orange
	Pre-paid	Post-paid	Combined	Pre-paid	Post-paid	Combined	Combined	Combined	Combined
ARPU 2003–04	\$13.84	\$57.05	\$40.62	\$22.00	\$70.00	\$48.00	n/a	\$91.00	\$55.00
ARPU 2004–05	\$12.24	\$59.06	\$39.33	\$21.00	\$67.00	\$46.00	\$49.58	\$84.00	\$55.00
Change	-\$1.60	\$2.01	-\$1.29	-\$1.00	-\$3.00	-\$2.00	–	-\$7.00	\$0
% change	-11.6%	3.5%	-3.2%	-4.5%	-4.3%	-4.2%	–	-7.7%	0%

Source: Mobile carriers

n/a: not available

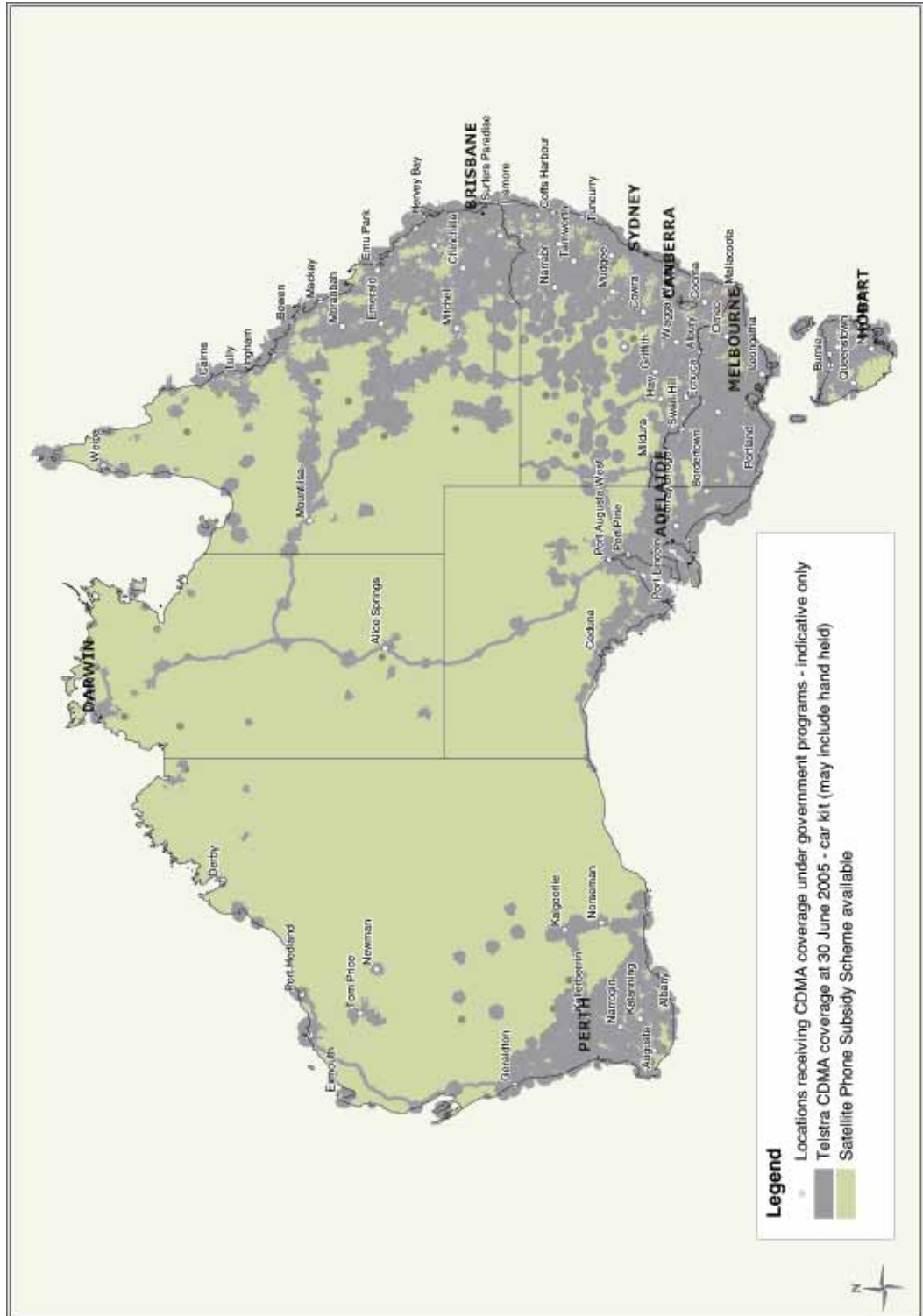
## Network expansion and satellite phone subsidies

The coverage and utility of Australia's mobile networks and their accessibility continued to expand in 2004–05, stimulated by a combination of commercial initiatives to expand and upgrade networks and government-funded programs aimed at increasing access to mobile services.

Government-funded programs (three separate contracts) continued to focus on improving coverage for selected regional highways, towns with populations of less than 500 residents and regional towns with more than 500 residents. These three contracts were awarded by competitive tender to Telstra. Telstra also won a tender to construct a further 62 mobile phone towers in regional Australia. Figure 5.3 is a coverage map showing the location of the network upgrades under these programs throughout Australia.

The government-funded satellite phone subsidy scheme was introduced in August 2002 and is designed to offset the higher cost of satellite handsets compared with GSM and CDMA handsets. The scheme provides subsidies up to \$1,500 toward the purchase of a satellite mobile phone and is available to applicants without access to terrestrial mobile phone coverage, including individuals, community groups, small businesses and emergency service organisations. During 2004–05, there were 3,399 applications for subsidies approved under the scheme, an increase from the 1,788 applications approved in the previous year. Since the scheme commenced, 7,518 applications have been approved.

Figure 5.3: Telstra CDMA coverage and location of network upgrades under government-funded programs, June 2005



5

Satellite mobile service operator Globalstar released a dual-mode CDMA and satellite mobile phone in May 2004. This new product benefits consumers in regional and rural areas by enabling them to use a single handset when moving from terrestrial CDMA coverage areas to areas with satellite mobile coverage only.

## TIO complaints

The number of complaints to the TIO about mobile phone services increased sharply during 2004–05. Complaint issues increased by 88 per cent to 40,254, up from 21,465 in the previous year. Even after normalising for the growth in customer numbers of 12 per cent, this still constitutes a 68 per cent increase in consumer complaint issues. (Chapter 3 discusses the interpretation of TIO complaints data.)

Table 5.11 shows the numbers of complaint issues about mobile services over the past three years by complaint category. Billing remains the TIO's largest area of complaint for mobile services (112 per cent increase), followed by contracts and faults (48 per cent and 100 per cent increases respectively). All major areas of mobile complaints have increased substantially over the past two years. During 2004–05, complaints about mobile phone services mostly increased steadily, quarter by quarter.

The TIO notes that the most significant development over the past year has been the rapid increase in mobile fault complaints, almost wholly associated with the Hutchison 3 network and largely attributable to 3G handsets. Another area of growing concern is complaints about the terms and conditions for premium rate SMS and MMS services, where on average complaints have doubled in each quarter of 2004–05.

Table 5.11: Mobile complaints received by the TIO, 2002–03 to 2004–05

Issue	Number of complaints		
	2002–03	2003–04	2004–05
Billing	4,797	4,756	10,095
Contracts	4,164	5,719	8,490
Faults	2,051	3,692	7,379
Customer service	2,607	2,710	6,639
Credit control	2,374	3,566	5,725
Porting	180	290	714
Privacy	244	268	513
Disconnection	210	318	405
Provision	99	123	235
Directories	40	20	48
Land access	4	2	9
Disability services	3	1	2
Total	16,773	21,465	40,254

Source: TIO

During 2004–05, the TIO received an increasing number of complaints about the terms and conditions of use for premium rate SMS and MMS services. These services typically include voting for interactive TV shows, entering competitions, accessing sports results, downloading ringtones or using SMS 'chat' services. Charges for these services are typically higher than for standard SMS and MMS calls.

Complaints about SMS and MMS services included:

- the absence or lack of clarity of information about the costs, terms and conditions in advertising of premium rate services, which resulted in an unexpected high bill for the customer or a failure to receive the product requested; and
- the difficulty in unsubscribing from a subscription service—customers found difficulty in recalling the appropriate keywords or used the appropriate keywords but found the unsubscribe function ineffective, which meant that premium rate services have continued in spite of the customer’s wish to unsubscribe, accruing significant costs.

In May 2004, the TIO started separately classifying billing complaints about SMS and MMS premium rate services. While the TIO does not handle content-related complaints, it can deal with complaints relating to matters such as terms and conditions or billing. New arrangements for the handling of content related complaints about premium mobile services are discussed below in the context of the Mobile Premium Services Industry Scheme.

The number of billing complaints about premium rate SMS and MMS services recorded by the TIO since 1 May 2004 has risen sharply for each quarter to June 2005 (see Table 5.12). The high growth rate in complaints may indicate systemic problems or the need for greater consumer awareness and stronger safeguards.

During 2004–05, the number of premium SMS and MMS services increased dramatically; this growth may have been facilitated by the ACA making a new series of premium SMS and MMS numbers available in May 2004. For example, *The Australian* newspaper reported on 31 May 2005 that the ringtones market in Australia is growing by 18 per cent per month and is expected to be worth \$120 million in 2005. The rise in complaint numbers appears to be a direct result of the increase in premium rate SMS and MMS services.

ACMA made the *Telecommunications Service Provider (Mobile Premium Services) Determination 2005* on 29 June 2005, which contains rules for developing and implementing consumer safeguards for users of mobile premium rate services (discussed below). However, it may be some time before the effects of the rules are reflected in fewer complaints to the TIO.

Table 5.12: TIO disputed billing charges for premium rate SMS and MMS services

Quarters	Jun 2004	Sept 2004	Dec 2004	Mar 2005	Jun 2005
SMS & MMS	42	88	113	560	944

Source: TIO

In the April 2005 issue of *TIO Talks*, the TIO identified that there has been a steady increase in complaints about premium rate SMS messages since before Christmas 2004. He noted that a common source of complaint is the frequency of the messages from some services, including horoscopes, jokes and ringtones. He noted that:

Consumers are often unaware that they will continue to receive the messages and be billed on a per message basis until they request them to be stopped. As each message is billed at a premium rate, this can lead to unexpected high bills ... Some consumers who have brought complaints to the TIO have been unable to cancel services through either their telephone provider or the provider of the premium service.

### Network drop-out and congestion

Call drop-out is a measure of the ability of a mobile network to maintain a call until it is terminated by the customer. It relates to network coverage, signal strength and the reliability of communication as a customer moves about the coverage area. Network congestion is a measure of the inability to establish a call or the inability of the call to continue when the customer moves from one cell to another, where the establishment or continuation of a call is impeded by unavailability of a spare radio channel.

During 2004–05, the ACA continued to monitor the performance of the four mobile network operators in regard to call drop-out and network congestion. The observed call drop-out rate averaged across all four carriers showed a slight improvement over 2003–04. In the previous year, call drop-out was a problem for customers of ‘3’ particularly, due to the introduction of new types of handsets on a brand new network. Network congestion averaged across the four mobile network operators for 2004–05 showed an improvement compared with the previous year. More details are in ACMA’s June 2005 edition of the *Telecommunications Performance Monitoring Bulletin*.

## Access for people with hearing or vision impairment

### *People with hearing or speech impairment*

The growth of mobile telephony has raised community expectations of being able to communicate for business or social purposes with anyone from anywhere at any time. However, people with hearing or speech impairment who rely on text communication have not enjoyed the benefits of mobile telephony commensurately with the rest of the community. Two issues have dominated—the cost of using SMS and the absence of real-time connectivity over cellular networks.

Although SMS is more readily available than teletypewriters (TTYs) using fixed line telephone services, SMS does not give real-time connectivity, is unsuitable for accessing emergency call services and cannot be used for communication using the National Relay Service (NRS) (see Chapter 3).

One impediment to the take-up of SMS by people with hearing or speech impairment has been the cost of using SMS. In 2003, this matter was the subject of complaints under the *Disability Discrimination Act 1992*. Since that time, plans have been introduced that favour SMS communications. Customers with hearing or speech impairment now have improved access to a range of competitively priced plans that are designed for SMS rather than voice communication.

The TTYs used in Australia have been reliable and empowering text-telephony terminals for people with hearing or speech impairment, but they only operate over the fixed-line analog telephone network. TTYs enable people with hearing or speech impairment to communicate with individuals, businesses, government agencies and other organisations, either through direct TTY-to-TTY communication or through the NRS.

However, there are limitations to TTY use—they do not enable direct access to mobile phones, and cannot be relied on to work from the extensions of many modern PABX switchboards, or from voice over internet protocol or wireless local loop terminals. Chapter 7 has more information about text connectivity for people with hearing or speech impairment in the context of technical standards development.

During 2003 and 2004, ACIF’s Any-To-Any Text Connectivity (TATA) Options Working Group examined options to improve text connectivity for people with hearing or speech impairment over fixed and mobile networks. The aim of the working group was to identify options that were affordable and practical, that would meet the needs of users and would encourage the migration towards suitable effective, efficient mainstream text communications services. The TATA group included representatives of industry, government and consumers and concluded its work in late 2004.

Engineering tests by members of the group established that the TextLink 9100M text telephone modem worked effectively over the GSM and CDMA networks to give mobile-to-mobile text connectivity, but did not ensure reliable connectivity with TTYs on the fixed line network. The TextLink 9100M is a battery-operated device with keyboard and screen that is compatible with the cellular text telephone modem (CTM) standard, developed as part of the 3G mobile standards suite.



During 2005, the Australian Government funded an equipment upgrade by the NRS. This upgrade enables calls to be relayed from or to customers using a variety of V.18-compatible text telephones on the fixed line network and CTM-compatible text telephones on the mobile network. V.18 is an ITU-T standard that enables interoperability between modems using otherwise incompatible data flow control protocols. However, it is neither economically feasible nor socially desirable to rely on an NRS operator to link two users with incompatible text telephones. TATA considered that interworking of current and new text communications services is essential and proposed achieving this by using a device called a text server, which would obviate the need for manual intervention from an NRS operator.

ACIF's TATA group recommended to DCITA that the government consider funding a national text server facility that would be established in Australia to allow inter-working between text telephones using V.18, V.21 and CTM protocols on fixed or mobile networks. This would allow mobile customers to enjoy real-time text communication with fixed line customers who are using TTY terminals. A text server prototype is yet to be developed and tested. The objective would be to establish a smooth transition from TTYs to text telephones that are compatible with digital telecommunications technologies.

The TATA recommendation proposed the implementation of two text servers, which would maximise service reliability through redundancy. It may be desirable to co-locate these with the NRS, but this is not mandatory. Pending the full transition to V.18 and CTM-compatible text telephones, a text server would allow mobile customers with TextLink terminals to enjoy real-time text communication with fixed line customers using TTY terminals.

## 5

### *People with vision impairment*

People who are blind have also enjoyed the flexibility that results from mobile communications. Using their mobile phones they can find each other more easily in public places, and they have the added security of being able to make a phone call if they are lost or feeling endangered. However, they generally have very limited access to the standard features of mobile phones—for example, they do not know the battery strength, the signal strength, if the PIN has been wrongly entered, if calls are missed, if the phone is accidentally on divert, or anything else that is shown on the screen. People who are blind are generally unable to use the mobile phone menu system, the telephone directory system, SMS or email. Many people with low vision find it difficult to find a mobile phone with a large enough, brightly lit screen that they can comfortably read, so they often face the same limitations as people who are blind.

Over the past couple of years, progress has been made for blind people to have access to the basic features of mobile phones. Three companies, one in Germany and two in Spain, have released products giving access through synthetic speech output from mobile phones using the Symbian Series 60/80 operating system. This allows blind users to use the menus on their mobile phones but does not guarantee access to third party software for functions such as email or word processing. These speech-enabled mobile phones are available in Australia. However, they are limited to high-end models which, together with the speech component, cost around \$1,000 at June 2005.

### *AMTA's Disability Action Plan*

Early in 2004, the Australian Mobile Telecommunications Association (AMTA) established an Accessibility Committee comprising the four mobile network operators and representatives of handset suppliers. The committee meets regularly and consults with telecommunications advocates representing customers with disabilities.

The committee has developed an action plan that aims to:

- increase members' awareness of disability issues including overseas developments;
- ensure that disability issues are considered as part of AMTA's consideration of all issues; and
- improve access to mobile services by persons with disabilities.



The committee has issued a *Good Practices Guide for Service Delivery to Customers with Disabilities*, which has wide-ranging advice for network operators, service providers, handset suppliers and retailers about how to make their products and services more accessible.

## M-commerce

Mobile commerce (m-commerce) refers to the use of wireless telecommunications in carrying out commercial transactions. Information exchange is typically by SMS and payment is by credit card, post-paid mobile phone account increment, or pre-paid mobile phone card decrement.

M-commerce examples include voting in connection with TV shows, downloading ringtones and wallpapers, subscribing to or paying for premium content services, paying for car parking and soft drinks, and paying for airline and concert ticket reservations. New m-commerce services are being developed that take into account the customer's precise location in providing geographic-specific information or instructions.

Consumer safeguards are fundamental for strong consumer take-up of m-commerce services. In February 2005, the ACA issued an *Industry Guide to M-Commerce*, which emphasises that, in addition to Commonwealth and state fair trading laws, there are telecommunications laws and codes that control m-commerce practices. The guide identifies community concerns, including: unfair and misleading marketing practices; spam; inappropriate, offensive or expensive content from premium services; unfair terms in contracts; and breaches of privacy or security.

## CONTENT SERVICES

5

A new and rapidly growing sector of the mobile telecommunications industry is content services, which has become prominent with the extra functionality of 2.5G and 3G mobile networks and customer handsets.

Mobile phones do not need powerful processors to double as digital cameras, music players or video displays, but require expanded on-board memory to store photos and music, as well as near-broadband network access to make the capture of video clips or multimedia streaming viable. Some content is prepared especially for delivery over mobile phones, whereas for other content the mobile phone is simply an alternative delivery medium.

Mobile content service charges are accrued through a mix of micro-payments, subscription and data volume charges, with subscription charges dominating. Together with capped plans in the voice sector of mobile telecommunications, this indicates a trend away from volume metering.

A Frost and Sullivan report, *The Australian Mobile Content Market 2004–09* released in May 2005, estimated that the Australian mobile content market was worth \$129 million in the 2004 calendar year. While the personalisation market—ringtones and wallpapers—remained dominant with 69 per cent of revenue, the mobile content market expanded beyond the early adopters to supply entertainment, news, information and productivity services such as email to an increasingly mainstream market. Frost and Sullivan expect high growth over the next five years to achieve \$1 billion annual revenue, driven by entertainment (including the adult services sector), followed by enterprise applications and productivity services (email and instant messaging services).

The OECD report, *Mobile Content: New Content for New Platforms* published in March 2005, gives insight into the growth and development of content delivered by mobile phone services, which includes: music; games; mobile video applications; enterprise services; information, location and tourist services; and other mobile content. Mobile content, led by music and games, is widely viewed as a strong growth driver in the telecommunications and media industries.

Adult content is also expected to drive demand for value-added content services and stimulate service innovation, as was the case with the internet. The growth and commercial significance of mobile content is currently being led by games and downloadable music including ringtones, but video content is expected to dominate traffic volumes on 3G mobile phones, which is also expected for internet traffic volumes. High growth rates for mobile content depend on the mass deployment of 3G networks and their strong take-up by customers.

The bundling of the mobile phone service delivery rights with television rights by the International Olympic Committee for the 2010 and 2012 Olympic Games is a clear sign of the growing importance and commercial reality of video content delivery using mobile phones. Australia's four network operators all have specific service offerings focusing on the delivery of content over mobile phones. These offerings include agreements with a range of content providers.

Some examples of mobile content services offered at the end of 2004–05 by network operators follow.

- Hutchison 3 has identified video and music as key genres for mobile content. In the first two weeks of the 2005 *Big Brother* reality TV series, there were more than 500,000 downloads of the live video stream by '3' users. By the time the series concluded, there had been two million video downloads, averaging five minutes duration for each download. Customers of '3' also have access to news and video clips of sports highlights. They can download songs and video clips to their handsets, where they can be played and viewed repeatedly, but they cannot offload them to another portable device due to copyright restrictions.
- To increase patronage for its mobile content, Vodafone Live! launched a 'new generation soap opera' about a group of young people living at Sydney's Bondi Beach. Subscribers receive two 'mobisodes' (mobile episodes) daily, five days a week, each consisting of a series of still photos with an accompanying textual storyline. Following the launch of Vodafone's 3G network in 2005–06, the program will be enhanced with video and sound.
- Optus Zoo also extended its content offerings beyond ringtones and screensavers to include live video streaming. By 30 June 2005, more than a million Optus customers had subscribed to Zoo, whose content includes downloadable Lonely Planet guides and a service in partnership with Fujifilm whereby customers can email their photos to Fuji for development and printing.
- Telstra's mobile content service uses the i-mode platform developed by NTT DoMoCo. Telstra content includes news, sport, entertainment and games. Users can also search classified advertising sites and browse travel and financial information. Under its licence agreement with NTT DoMoCo, Telstra has exclusive rights to market i-mode in Australia for five years, provided that it attracts at least one million customers in the first three years.

During 2004–05, non-voice ARPU for Hutchison '3' customers increased by 33 per cent to \$16 per month. While non-voice ARPU from SMS was stable at \$9 per month, there was strong growth to \$7 per month from '3' content services, video-calling and high speed data access.

Hutchison attributes the strong growth in the use of content services to new product launches including: the sponsorship of *Big Brother*; the launch of '24/7' streaming of *Rage* video music; the availability of a wide range of real-time, multi-player games; and the launch of a business messaging (mobile corporate email) product targeting small to medium businesses. By the year's end, over 65 per cent of '3' customers were accessing its content portal on a regular basis, 60 per cent of whom generated a billable content event in June. Since the introduction in September 2004 of content subscriptions, Hutchison had sold 420,000 packs ranging from \$1 to \$7.50 per month.

The current international take-up of some mobile content services may provide a guide to their future significance in Australia. As widely reported in the press in the United Kingdom in May 2005, the *Crazy Frog* ringtone held its place at top of the pop music charts for more than one month. According to the OECD report, the global ringtone market in 2003 was worth US\$3 billion. Revenue from ringtones has outstripped revenue from CD singles in the United Kingdom and Germany, and in the United States the value of ringtone purchases now exceeds the value of downloads from music sites on the internet.

Ringtones are now being supplemented by ‘ringtunes’ and ‘ringbacks’:

- *Ringtunes* are portions of actual recordings that are downloaded and used as mobile phone rings. Unlike ringtones, which are re-creations of popular music titles, ringtunes are actual clips of original sound recordings by the original artists.
- *Ringbacks* allow the user to select what callers hear before the phone is answered—and include jokes, jingles, clips of celebrity voices and spoken messages. While ringbacks are popular with the youth market, companies also use them to advertise their services. Unlike ringtones, which are downloaded onto the user’s handset, ringback tracks reside in the carrier network.

## PREMIUM RATE MOBILE CONTENT SERVICES

Premium mobile content services include voting for interactive TV shows, entering competitions, accessing sports results, downloading ringtones and ‘chat’ services. These services are delivered by SMS and, increasingly, by mobile carrier portals. Premium SMS services are accessed via numbers with prefixes of 191, 193, 194–7 and 199. Examples of mobile carrier portals include Optus Zoo, Telstra i-mode, Hutchison 3 On Three, Virgin Mobile The Vibe, and Vodafone Live!

Costs associated with services delivered via SMS are typically higher than standard SMS charges. Although charges for both premium SMS services and content accessed via mobile carrier portals are incurred on a customer’s mobile account, the services are generally provided by third party suppliers rather than mobile carriage service providers.

Consumers benefit from the immediacy and convenience of accessing these services from a mobile phone handset as well as from the inclusion of the cost on a mobile phone bill, which eliminates the need for transaction-based micro-payments. Some consumer concerns exist about the need for appropriate regulation of access to premium rate mobile phone services, in particular, appropriate credit management processes and the regulation of age-restricted content.

### Protecting customers from high bills

Community concerns about the need to protect customers from unexpected high bills for accessing premium SMS and MMS services remained during 2004–05, as the most appropriate regulatory regime was being determined.

The Minister made the *Australian Communications Authority (Service Provider Determination) Direction 2004 (No.1)* on 13 April 2004, requiring the ACA to:

- make rules to help protect consumers from the potential risks of unexpected high bills associated with 190 prefix premium rate and 191, 193–7 and 199 prefix services, together with services accessed by an international access code and on proprietary networks; and
- report to the Minister within six months on actions taken by CSPs to address internet dumping on international numbers and on the credit management measures that the telecommunications industry has in place, or is developing, to address unexpected high bills.

In response to the Minister's direction, the ACA made two service provider determinations requiring CSPs to provide information to their customers on the risks of accruing unexpected high bills from using premium services and the actions customers can take to minimise those risks. The determinations were:

- the *Telecommunications Service Provider (Premium Services) Determination 2004 (No. 1)*, issued in May 2004, which applies to international premium services and services on the 190 prefix; and
- the *Telecommunications Service Provider (Premium Services) Determination 2004 (No. 2)* issued in September 2004, which applies to premium services on the 191, 193–197 and 199 prefixes and proprietary networks.

The ACA completed its report to the Minister in October 2004. The report concluded that there were serious deficiencies in credit management practices across the telecommunications sector, evidenced by increasing numbers of credit management-related complaints to the TIO and by a rising level of credit defaults notified by CSPs and ISPs to credit bureaus (see Chapter 3). The report identified three outcomes that would substantively ameliorate these deficiencies:

- that consumers possess a reasonable understanding of the telecommunications products and services that they use and have certainty about the costs of telecommunications services, the associated risks and their expenditure on these services;
- that consumers have the means to properly manage their expenditure on telecommunications services; and
- that the expenditure of consumers on telecommunications services is limited in line with their preferences or their ability to pay.

In April 2005, ACIF began a revision of its credit management code with the aim of addressing or ameliorating this issue and achieving these outcomes.

## Content regulation

In response to community concerns that minors would be able to access age-restricted content on new premium rate services and mobile carrier portals, the Minister directed DCITA to undertake a review of the regulation of content delivered to new and emerging communications devices, such as 3G mobile phones. The review is considering what measures should apply to audiovisual content delivered to mobile communications devices to protect consumers from inappropriate or harmful material.

Pending the outcome of the review, the Minister made the *Australian Communications Authority (Service Provider Determination) Direction 2004 (No. 2)* on 13 May 2004, directing the ACA to put in place new measures to protect mobile phone users from offensive content and to restrict access to adult services available on premium mobile services.

The Minister's direction required the ACA to:

- prohibit the supply of content that has or would be classified X18+ or refused classification by the Office of Film and Literature Classification (OFLC);
- prohibit content that has or would be classified MA15+ or R18+ by the OFLC to be supplied via premium SMS or MMS services unless supplied using numbers with a specific designated prefix; and
- put in place rules to limit access for content that has or would be classified MA15+ or R18+ by the OFLC to people 18 years and older.

The ACA made a service provider determination at the end of June 2005—the *Telecommunications Service Provider (Mobile Premium Services) Determination 2005 (No. 1)* (the ‘2005 determination’)—that responded to the Minister’s direction.

Before the 2005 determination was made, in May 2005 the ABA registered a revision of the Internet Industry Codes of Practice under Schedule 5 of the *Broadcasting Services Act 1992*. These codes include rules regarding the availability of content on mobile phones that is accessed via the public internet or through mobile carrier portals. Consistent with the intention of the Minister’s direction to the ACA, the purpose of the revised Internet Industry Codes of Practice is to prevent access to prohibited content and to prevent access by minors to age-restricted content.

While the 2005 determination addresses the particular requirements of the Minister’s direction, it also contains rules related to other issues arising from the supply of mobile premium services:

- the need to protect children from contact with paedophiles in mobile chat rooms;
- the need to ensure transparency of costs and terms and conditions of mobile premium services, including protection of consumers from scams; and
- the need to ensure that consumers are able to have complaints about mobile premium services effectively dealt with.

The 2005 determination also specifies a number of enforcement capabilities which ACMA may use in cases where obligations in the determination are not met.

The main features of the 2005 determination, other than those that correspond to the specific requirements of the Minister’s direction, are as follows:

- Mobile CSPs must only supply age-restricted content to customers who have requested such access and whom they have verified are 18 years or over. The procedures for verifying age must be reasonably robust, and details of the procedures must be recorded in an ‘age verification compliance plan’ that ACMA may audit.
- Providers of mobile chat room services must implement safety measures commensurate with the risk of a particular chat room being used by paedophiles for grooming of children. An assessment of the risk, a description of the safety measures, and a description of related quality assurance measures must be recorded in a ‘safety measures compliance plan’ that ACMA may audit.
- ACMA will publish a ‘safety measures notice’, which will provide guidance regarding chat room safety measures that are likely to minimise the risk of contact in mobile chat rooms between children and paedophiles.
- Mobile CSPs and content service providers are able to develop rules, referred to as a ‘self-regulatory scheme’, relating primarily to costs, terms and conditions and handling of complaints for mobile premium services. These rules may be approved by ACMA, a step which will give the rules a legal underpinning.

At the end of 2004–05, mobile CSPs (through AMTA) and content service providers (through the Australian Direct Marketing Association), together with the Telephone Information Services Standards Council, were developing such a self-regulatory scheme.

A self-regulatory scheme must include the following elements:

- rules ensuring transparency of costs and terms and conditions in advertising;
- rules ensuring that customers are informed of the charges for the use of services prior to or at the time of accessing the service;
- advertising requirements for children's and age-restricted services;
- requirements to provide a capability to discontinue subscription services, and specification of a uniform unsubscribe command for premium SMS and MMS services;
- rules specifying terms and conditions for voting or competition services, including the provision of refunds in specified circumstances;
- procedures for assessment of age-restricted material;
- rules for posting messages in mobile chat rooms;
- rules for resolving complaints within a specified period; and
- procedures for informing complainants about how they may escalate complaints to an independent review body.

## 5

### Potential problems with premium services

#### *Restricted content*

Overseas experience suggests that restricted content and services are likely to be offered on new premium rate services and walled garden mobile portals, particularly as the take-up of 2.5G and 3G technology increases. Restricted content could be provided in audio-visual form, in still images or in text services, which would be similar in concept to telephone sex services.

Australian regulation barring prohibited content and aimed at preventing access by minors to restricted content applies to electronic media, including computer games, movies, television, the internet and telephone sex services. However, when in May 2004 the Minister directed the ACA to develop the 2005 determination, there was no legislation in either the telecommunications or broadcasting spheres regulating the audio-visual or text content provided on walled garden mobile portals and on premium rate SMS and MMS services.

Until the development of the 2005 determination, there was the potential for minors to access restricted content services on premium rate numbers and walled garden mobile portals to view material that would be inappropriate for their age group. Unlike the fixed internet, the private and personal nature of mobile phones makes parental supervision much more difficult. The absence of appropriate content-filtering devices increases the likelihood of minors accessing restricted content on their mobile phones.

#### *Chat room safety*

A variety of mobile chat room services are currently available on premium rate numbers and walled garden mobile portals. The Child Protection Unit of the Queensland Police alerted the ACA to the potential for paedophile activity in mobile phone chat rooms.

This risk may be higher in private or one-to-one mobile chat rooms where no age restriction applies and there are no other measures in place to protect children. In such environments, paedophiles are able to establish friendships with children with the ultimate aim of engaging in sexual activity with the child, a practice commonly referred to as ‘grooming’. While it is an offence under the *Crimes Act 1914* to groom a person under 16 years of age, using a carriage service, there is no regulation under the Crimes Act to require content or carriage service providers to provide safety measures to prevent children being groomed by paedophiles.

The media gave wide coverage to the closure of the mobile chat room ‘Teenzone’ in October 2004 in New Zealand, when it was discovered that paedophiles were using the service to groom minors.

The Child Protection Unit of the Queensland Police has received 70 complaints from the public about the activities of paedophiles in internet and mobile phone chat rooms during the past 12 months. This has led to 31 offenders being arrested on 103 charges.

In one case, a person has been arrested twice for procuring children using a mobile phone chat room after his computer equipment had been removed to prevent him from using internet chat room services to groom children. This suggests that paedophiles may switch technologies as the uptake of more technologically advanced mobile phone handsets increases. The implementation of safety measures for mobile chat rooms is directed at reducing the likelihood of this activity occurring.

## INDUSTRY INITIATIVES

### Lost and stolen mobile phones

Since September 2003, mobile carriers have been sharing information to block calls from identified stolen or lost mobile phone handsets on all GSM networks. The GSM handset’s unique electronic serial number, known as the international mobile equipment identity (IMEI) number, is used to ‘blacklist’ handsets reported as lost or stolen.

In July 2004, AMTA launched an online IMEI checking service that enables consumers or second-hand mobile phone resellers to check that the phone is not blocked. The service complements a new Commonwealth law passed in August 2004 making it a criminal offence to ‘rebirth’ stolen mobile phones by illegally modifying a phone’s electronic serial number.

During 2004–05, the mobile phone operators received 240,214 blocking requests for lost or stolen handsets. Of these, 59,506 were subsequently unblocked as the customers had found or reclaimed their mobile phones.

### Social impact of mobile phones

During 2004, AMTA recognised that little was known about the impact of mobile phones on the people and institutions of Australia and decided to develop a research agenda to assess this impact. The impact of mobile phones—using SMS for social arrangements, having ringtones and wallpapers as fashion statements and increasing youth debt related to mobile phone use—is widespread, but not always clearly understood. The adaptation of behaviours is changing as new possibilities of social organisation and interaction arise.



AMTA commissioned the Academy of the Social Sciences in Australia (ASSA) to write a discussion paper on the social impact of mobile phones. The paper, *The impact of the mobile telephone in Australia: Social Science Research Opportunities* (J. Beaton and J. Wajcman, September 2004), identified the following key research areas:

- the structure of social groups and the impact of the mobile phone;
- work, home and leisure;
- social innovations in digital content; and
- patterns of use of mobile telecommunications.

In April 2005, building upon the ASSA paper, DCITA released a scoping paper, *The social impact of mobile phone use in Australia: a review of data sources*. This paper provides a preliminary scan of the available data and information on mobile phone usage in Australia and internationally. It concludes that there is a wide variety of data sources and research, with most attention focused on patterns of use and social innovations. However, the paper highlighted key research gaps, due in part to the absence of reliable and comprehensive data in the public domain.

These papers identify research areas and available information and form a valuable reference for researchers in Australia to investigate specific issues concerning the social impact of mobile phone technology and services. ACMA anticipates that sociological trends with mobile phone usage will be a growing research area, and will provide more detail on the findings of this research in future reports.

## 5

### Use of mobile phones in schools

A variety of novel applications have been developed relating to the use of mobile phones in schools, but it has also become necessary to give attention to the hazards associated with mobile phone usage by young people.

With the high level of penetration of mobile services, hundreds of schools throughout Australia are now using individual or automated SMS communications to notify parents of unexplained absences of their children from school. SMS communication saves staff time, while parents generally appreciate receiving a discreet alert that something might be wrong. In some secondary schools, there has been a dramatic reduction in truancy through the use of such SMS alerts. For example, at Mitchelton State High School in Brisbane, the average number of unexplained absences per student per year has dropped from 8.0 to 0.44 after the first year of operation, with 90 per cent of parents having signed up to the new SMS communications system.

The increased usage of mobile phones by children requires school communities to take steps to ensure they are used responsibly within schools. To assist these communities, AMTA created a template policy document, *Developing an Acceptable Use Policy for Mobile Phones in Your School*, for use by schools. The document, which has been widely circulated, sets out appropriate behaviour relating to the use of mobile phones and is designed to supplement school rules. AMTA has also published two pamphlets concerning the use of mobile phones for bullying—one targeted at children and the other at parents.



## Mobile phone recycling

AMTA continued to expand its Mobile Phone Recovery Program in 2004–05 and there are now more than 1,700 retail stores and repair centres acting as collection points for recycling handsets across Australia. According to AMTA, more than 300 tonnes of handsets, accessories and mobile phone batteries have been collected for recycling since the program began in 1999, corresponding to 1.15 million batteries and 500,000 handsets having been collected. Over the past four years, the industry has invested \$3.5 million in the recycling program and its promotion, and AMTA is continuing to promote the program so that the recycling rate is increased.

A study on behalf of the mobile phone industry by the Klein Partnership and released in May 2005 interviewed 900 individual and 200 business customers. The study found that more than 12 million mobile phones no longer in use have been retained by their owners and have not been trashed, recycled or reused. The survey also found that:

- 42 per cent of respondents keep their old mobile phones, even when they no longer work;
- 18 per cent of respondents give their old phone to a family member or friend;
- nine per cent throw their old phone away; and
- only four per cent recycle.

# chapter 6

## CHAPTER 6: THE INTERNET

Key findings	99
Analytical model for the internet	100
<i>The layered approach</i>	100
Internet subscriber trends	102
<i>Australian trends</i>	102
<i>International trends</i>	103
Internet service provider trends	104
Consumer issues	104
<i>Internet prices</i>	104
<i>Quality of service</i>	104
Internet usage	105
<i>E-commerce</i>	106
<i>Emails and instant messaging</i>	106
<i>Online banking</i>	106
<i>User empowerment</i>	107
<i>Trust and confidence</i>	108
Policy, regulatory, industry and user responses to internet issues	111
<i>Internet regulation</i>	111
<i>Online content</i>	113
<i>Equitable access</i>	114
<i>Industry regulation</i>	116
<i>User awareness and responsibility</i>	119
Subscription television	119
<i>Size and structure of the pay TV industry</i>	119
<i>Investigations into the pay TV industry</i>	119

# 6

## CHAPTER 6: THE INTERNET

This chapter outlines the main telecommunications elements of the internet industry and the emerging industry performance and consumer issues. The multi-layered nature of the internet is provided as a background to enable a more comprehensive assessment of the internet industry's performance than in past telecommunications performance reports.

While the main interest is with the Australian industry, in an increasingly inter-connected and interdependent global society, consideration of the internet industry's performance necessarily extends to the international context. This chapter also provides a brief overview of the subscription television (pay TV) industry's performance.

### KEY FINDINGS

- The internet is a distributed, global, multi-layered network of networks. While there are internet management systems such as global peering arrangements and the coordination of domain names, addresses and technical standards, there is no centralised or overarching network management system. The lack of centralised control points makes it difficult to monitor or control data traffic.
- A combination of rapidly rising broadband connectivity, increasingly powerful computers and other user devices at the edge of the network, as well as peer-to-peer networking, is driving internet usage growth in Australia and internationally. This trend is expected to continue over the next five years, further increasing the social and economic importance of the internet relative to other communications services.
- User perceptions of trust and confidence in the internet are multi-faceted, and incorporate internet security, information veracity, privacy, concerns about access to illegal or harmful content and equitable access.
- There is increasing awareness at the national and international governmental levels, within industry and consumer groups, of the need to make the internet more robust and secure and to manage the risk of exposure to illegal or harmful content.
- Measures and processes undertaken during 2004–05 are outlined in this chapter, including use of the criminal justice system, government regulation, joint government–industry regulation, industry self-regulation and education of users about their responsibilities.
- There has been little change to the size and structure of the pay TV industry from 2003–04 to 2004–05.

## ANALYTICAL MODEL FOR THE INTERNET

The internet is a distributed network of interconnected computers forming a global network of networks. This section does not cover networks that use internet protocol (IP) for purposes other than the internet.

While much of the internet runs over physical infrastructure provided by the telecommunications industry, there are important differences from the centralised traditional telephone system, such as there being no over-arching network management system. As traditional networks have very strict network boundary controls, network management can be successfully done by independent operators. In contrast, the internet—as an interconnected network of networks—is in many ways a single network, but only discrete elements are managed by any one operator. While there are internet management systems such as global peering arrangements and the coordination of domain names, addresses and technical standards, network management overall is problematic.

Other important differences between the internet and traditional telecommunications and broadcasting services are the absence of separate or distinct network, service and provider elements. Other distinctive characteristics of the internet are that:

- its architecture has been designed in accordance with the ‘end-to-end’ principle, meaning that users may access, create or modify applications or content independently of the network operator;
- content and applications are distributed and implemented transparently (independently and without discrimination or modification) in the logical and physical infrastructure layers;
- there are no physical or territorial boundaries—applications and content services can be provided globally and independently of the physical location of the service provider;
- there are multi-layered interconnection and interoperability arrangements and standards between service and network providers;
- interconnections between internet service providers (ISPs) may be either on a peering (no-fee) or payment basis; and
- in most cases, charges are not based on transit-related time or distance.

### The layered approach

Drawing on an expanding body of literature from the United States (including Lawrence Solum and Minn Chung; Kevin Werbach and Richard Whitt) a layered approach is used to describe the main elements of the internet and the user interface. The layered model is a useful way to analyse and report on emerging regulatory issues and industry performance. The layers concept is familiar to internet engineers, but until recently in the United States and Europe the layers concept has not been applied to the analysis of internet regulation. The layered model applied here differs from the internet protocol suite by adding content and physical infrastructure to provide an integrated conception of the internet as a communications system.

The layers used in this chapter are set out in Table 6.1. Each layer performs different functions and the layers are integrated through technical interfaces known as protocols. Interconnection arrangements include physical connection between networks, and connectivity between end-users and applications.

Table 6.1: The layered approach

<b>Content layer</b>	Sounds and images (eg text, voice, music, videos, pictures)
<b>Applications layer</b>	Programs (eg word processors, multimedia, VoIP software, document viewers) Application protocols (eg web browsers, email, file transfer, SIP, DNS)
<b>Logical layer</b>	Transport/TCP (divides the byte stream into packets) Network/IP (data flow) Link interface (between computers and physical layer)
<b>Physical layer</b>	Transmission (eg twisted copper pair, DSL, optical fibre, CDMA, WiFi, satellite)

### *Physical infrastructure layer*

The physical infrastructure layer transports digital data bits and includes carriage networks (local access and core networks), data signalling, modems, transmitters and terminals. Carriage networks overall may include combinations of twisted copper pairs, hybrid fibre coaxial (HFC), optical fibre, satellite, cellular and fixed wireless access services. Also included in this layer is the link layer, which transfers data between the physical layer and computers. An example of the link layer is the Ethernet protocol.

### *Logical layer*

The logical layer includes the transmission control layer (TCP)/IP suite of transport and network protocols for the decoding of IP addresses and routing of data packets. The TCP breaks the data into packets. The IP governs the addressing and routing of data packets through a network to ensure the packets are delivered to the right place. The packets are transmitted through a series of routers—otherwise known as the core of the network—in accordance with the IP sender–receiver addresses included in each packet. Individual packets that make up a single data session may travel in different paths through the network. This lack of control points means that traffic monitoring, such as monitoring what content is being transferred, can be problematic. Monitoring closer to the user’s computer or the source of transmission increases the likelihood of collecting all the packets of a given message.

### *Applications layer*

Applications layer software interprets how packets that are transmitted over the physical and logical layers are used. The application the message is intended for may be identified through a specified port-number—for example, web page, email or file transfer—although some applications use dynamic or variable port numbers. The domain name system (DNS) is the global system used by computers on the internet to resolve domain names (such as www.acma.gov.au) into end-points defined by IP addresses (such as 165.191.2.14).

Applications layer protocols enable computers to interconnect with other computers and include mainstream networking protocols such as the hypertext transfer protocol (http) that enables the World Wide Web and file transfer email and session initiation (SIP) protocols. Most user functions are implemented in the applications layer.

Applications such as multimedia and word processing software can be either proprietary or open source (where the code is publicly accessible and modifiable). Consistent with the end-to-end principle, anyone can develop applications to run over the internet and open systems applications are modifiable by end-users.

### *Content layer*

Content is one or more of voice or video communication, text or multimedia messaging, information, electronic files and entertainment services such as music downloads and video streaming. Content may be produced, distributed and accessed through individual computers and servers connected to the internet. In a globally networked world, local digital content competes with international digital content sources.

ISPs may offer their own content such as audio downloads and information services, as well as host third-party content services. Services may also be outsourced to providers where the content is from overseas locations. ISP revenue also comes from online advertising.

### *Developments at the physical layer*

At the local access level narrowband (mostly dial-up) access technologies have dominated internet connectivity since the 1970s. This is now changing with the trend during 2004–05 to higher data-rate broadband connectivity—always-on access at greater than 256 kilobits per second (kbit/s). The demand for broadband is being driven by the need to support real-time multimedia applications, such as video-conferencing, audio and video file sharing and electronic commerce (e-commerce), as well as the convenience of being ‘always on, always connected’. Price reductions have also encouraged users to switch from lower data-rate dial-up technologies to broadband.

The most recent information on the mix of broadband access technologies reported by the OECD (December 2004) for member countries was split on average between digital subscriber line (DSL) (60 per cent) and cable modem (33 per cent), with other technologies, optical fibre, wireless local area networks (WLANs), satellite and fixed wireless making up the remaining seven per cent. The OECD noted that optical fibre is becoming significant in Japan, accounting for 12.5 per cent of all broadband connections.

The OECD reported that Australian broadband access technology (excluding cellular) was split between DSL (74 per cent) and cable (26 per cent). Other technologies accounted for a mere 0.1 per cent. The ACCC's *Snapshot of Broadband Deployment as at 30 June 2005* showed that DSL and cable accounted for similar shares.

During 2004–05, the data rate of asymmetrical DSL (ADSL) connections available in Australia increased dramatically above the previous limit of 1.5 Megabits per second (Mbit/s), with the release of full ADSL1 (8 Mbit/s), ADSL2 (up to 12 Mbit/s) and ADSL2+ (up to 24 Mbit/s) services by several ISPs. These technologies could not be deployed until rules for new generation broadband services were released in April 2005—*ACIF C559:2005 Unconditioned Local Loop Service (ULLS) Network Deployment Rules*. In May 2005, the International Telecommunication Union (ITU) finalised work on a very high bit rate (VDSL) 2 standard that will allow carriers to offer up to 100 Mbit/s. These developments indicate an ongoing utility for the copper network and that increasing demands are likely to be placed on it.

A competitive environment is emerging in wireless broadband access through city-wide fixed wireless networks; through at least 10 localised hotspot operators and WLANs in regional centres, schools, hospitals and other institutions. At least 26 of the 40 new carrier licensees in 2004–05 are proposing to deploy broadband wireless access technologies.

6

WLANs deployed as hot-spots (site-specific with a range of 30–100 metres) continued to expand during 2004–05. According to the European Commission, by June 2005 there were approximately 26,000 hotspots in Western Europe, 29,000 in the Asia–Pacific region and 23,000 in the United States.

Australian developments in optical fibre use include pilot sites, deployment in new housing estates and state government initiatives to connect government institutions.

#### *Computing interface developments*

Personal computers, mobile phones and other user devices now have much greater computer processing power, data storage capacity and, in the case of mobile or portable devices, longer battery life than ever before. These developments also drive demand for higher data-rate carriage services and applications such as real-time video and music file transfer.

In April 2005, Australian companies SMS Management & Technology and Pie Networks reported a successful trial of public internet kiosks. With this success, internet kiosks may replace payphones in some transport terminals and other locations.

## INTERNET SUBSCRIBER TRENDS

### Australian trends

The ABS reported that by 31 March 2005 the number of internet subscribers in Australia (dial-up and non dial-up) reached 5.98 million services, with 5.1 million (86 per cent) being household subscribers. While subscribers increased by four per cent in the six months to 31 March 2005, the growth-rate slowed following a 10 per cent increase recorded for the six months to 30 September 2004.

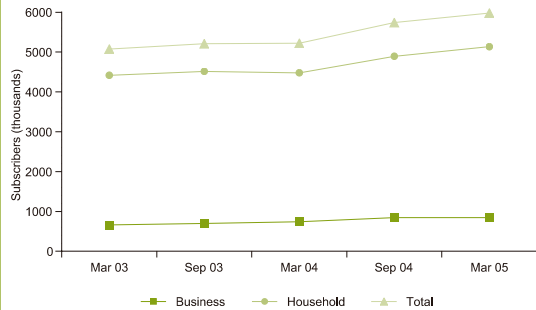
Overall, the ABS reported that the growth in total internet subscriber numbers for the year to March 2005 was 15 per cent, with non dial-up subscriber numbers increasing very rapidly (up 109 per cent), while dial-up subscribers fell by four per cent. Dial-up subscribers accounted for 70 per cent of total internet subscribers, and broadband accounted for 30 per cent.

The ACCC regularly reports on the deployment of broadband services in operation in Australia based on data provided by the major carriers. According to the ACCC data, the total broadband take-up was 2,183,300 at June 2005, an increase of 108.4 per cent or 1,135,500 services on the June 2004 figure.

By June 2005, Telstra BigPond had announced its two millionth internet connection, comprising 800,000 broadband and 1.2 million dial-up services. At that time, Telstra was forecasting an Australian total of four million broadband subscribers by mid-2007—equivalent to a household penetration rate of approximately 53 per cent.

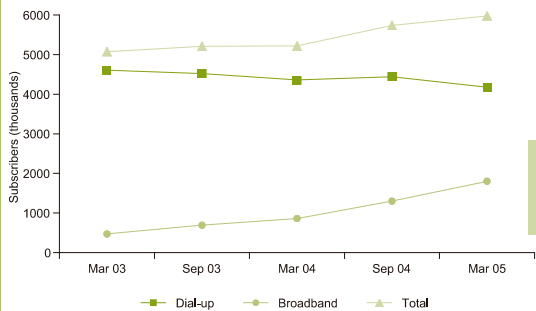
The sustained drop in pricing for entry-level ADSL services (those providing data rates around 256 kbit/s) to under \$30 per month was also a factor in the increased take-up of broadband services in Australia, with various ISPs aiming to sell these services to existing dial-up customers.

Figure 6.1: Subscribers by customer status, March 2003 to March 2005



Source: ABS *Internet Activity, Australia, March 2005*

Figure 6.2: Trends in dial-up and non dial-up subscriptions, March 2003 to March 2005



Source: ABS *Internet Activity, Australia, March 2005*

## International trends

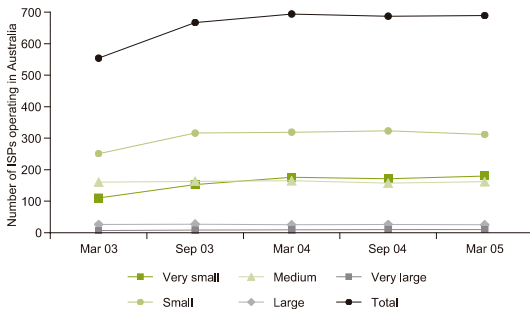
The OECD reported that by the end of the fourth quarter of 2004, broadband growth in member economies had been rapid, with broadband subscriptions increasing 41 per cent during 2004. At that time, the total number of broadband subscribers in member countries was estimated to be 118 million. A high rate of growth is expected to continue, with some estimating that broadband users worldwide will double between 2005 and 2010.

At December 2004, the OECD ranked Australia twenty-first among OECD countries for total broadband subscribers per capita. At 7.7 broadband subscribers per 100 inhabitants for the year to June 2004, Australia's penetration rate was less than the OECD average of 10.2 subscribers per 100 inhabitants. Korea was ranked first with a penetration rate of 24.9.

Point Topic Ltd, a provider of information on broadband services based in the United Kingdom, reported an increase in world broadband lines to 176.3 million by June 2005, up from 112 million since March 2004, an increase of 57.4 per cent. DSL services continue to dominate, with 65 per cent of the world broadband market share. Broadband penetration in South Korea, Hong Kong, the Netherlands, Denmark and Switzerland exceeded 20 lines per 100 inhabitants.

## INTERNET SERVICE PROVIDER TRENDS

Figure 6.3: Number of ISPs operating in Australia, March 2003 to March 2005



Source: ABS *Internet Activity, Australia, March 2005*

recognised brands. iiNet purchased Ozemail from MCI in early 2005 to become the third largest ISP in Australia and New Zealand, with 580,000 subscribers at that time. Some ISPs, such as Yahoo! and ninemsn, are information portals where emailing services and web content are largely provided through computer servers located out of Australia.

Users access the internet through 'points of presence' operated by ISPs. As well as internet connectivity, ISPs may provide services such as email, instant messaging, web page hosting, and access to online content and data storage.

The ABS reported that the total number of ISPs in Australia decreased slightly from 694 in March 2004 to 689 by March 2005 (see Figure 6.3).

Internet access services are concentrated in the 10 largest ISPs (those with more than 100,000 subscribers) accounting for 77 per cent of subscribers (4.6 million). There were 180 ISPs with fewer than 100 subscribers. As well as pricing and service quality issues generally, this may indicate a preference to purchase bundled services from

## CONSUMER ISSUES

### 6

### Internet prices

According to the analysis of benefits accruing to households and small businesses during 2004–05, a key factor behind subscriber growth was Telstra's substantial reduction in the price of its entry-level retail ADSL service in February 2004, followed by an ACCC competition notice in March 2004 and new Telstra wholesale prices from December 2004. Industry revenue growth was significantly smaller than subscriber growth with revenues per Gigabyte for ADSL in the 12 months to 31 March 2005 declining by 54 per cent, for cable by 49 per cent and for narrowband by 19 per cent. Other sources of price competition have been new broadband wireless access service providers in some areas, and increasing numbers of exchanges fitted with DSL equipment.

The ABS reported that at 31 March 2005 the majority (87 per cent) of Australian internet subscribers used monthly, quarterly or annual service plans to access the internet. Hourly access plans accounted for 11 per cent of subscribers.

Internet services that are bundled with telephone or pay TV result in significant discounts for customers. Some examples of service offers made during 2004–05 are a four-month subscription-free offer, with free local calls, unlimited internet downloads and lower monthly subscriptions than plans without a telephone service.

### Quality of service

Internet traffic for residential services is generally delivered on a 'best-effort' basis where all traffic is treated with equal importance. With these parameters, minimum quality of service standards may be difficult to guarantee for specific internet services. Although service differentiation is possible, managing quality of service remains problematic, especially with real-time voice and video traffic although providing sufficient bandwidth in all links is an important consideration for service providers.

A related and compounding issue is the willingness or ability of competing operators to share information about traffic types and volumes to achieve end-to-end quality guarantees.



Resolution of these matters may require internet traffic-type prioritisation and other network performance parameters that would need to be standardised to operate across multiple networks. In the absence of international agreement, different network operator approaches to quality of service parameters might fragment interconnectivity between networks.

Significant factors that are likely to influence user satisfaction with broadband services are data rate, pricing, service reliability and technical support. Quality of content is of relatively less importance. Lower prices, and higher download limits and data rates are factors that might tempt a customer to churn to a different ISP.

In 2004–05, the ACA investigated measures of broadband internet quality of service from the consumers perspective. The study involved the analysis of test results collected by the TCP/IQ line speed meter over the period 1 July 2003–30 June 2004. The line speed meter is downloaded voluntarily by users from an internet site and runs from the user's computer. To measure data rates, the line speed meter records the time taken to download a set of files, selected randomly from a list of popular websites. Upload tests are conducted similarly using standard files.

The performance results showed that, of the ISPs with sufficient test results to estimate network outages, the estimated network availability is better than 99.73 per cent across all states, ISPs and technologies. This meant that, as a user of a broadband service, a consumer may expect that the network would be unavailable for less than two hours in any month, on average.

Average download rates tended to be uniform for each access technology, regardless of the ISP or location, but achieved only around 70–80 per cent of the advertised plan data rate. While this is because of overheads resulting from internet protocols or other external effects, a consumer may not be aware of the practical limitations to their contracted plans.

## INTERNET USAGE

6

The internet is becoming more widely used in everyday life, and is of growing importance relative to traditional and segmented sources of information, entertainment and telecommunications. According to ACNielsen/NetRatings, the number of internet users in Australia reached 13.6 million as of February 2005, a penetration rate of 66.4 per cent. The Sensis *e-Business Report – The Online Experience of Small and Medium Enterprises* revealed that 88 per cent of all small to medium enterprises had internet access at May 2005.

Internet usage ranges from:

- interpersonal or group communication by voice, video, messaging and web logging;
- searching for information and news;
- entertainment (games, music, videos, TV);
- e-commerce such as online banking and shopping;
- e-education; and
- e-government (access to services and information).

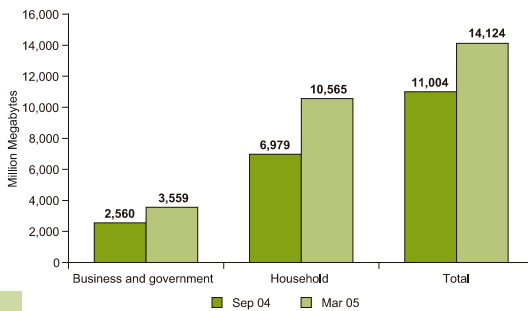
According to ACNielsen/NetRatings, the top 10 websites visited by Australians at home in March 2005 belonged to (in order of unique audience and market reach): Microsoft, Google, Yahoo!, Telstra, eBay, the Australian Government, News Corporation Online, Time Warner, Fairfax Digital and the Commonwealth Bank.

Of likely interest to Australian consumers in the near term is the provision of so-called triple-play services—telephony, data and video services—through ISP investment in ADSL2+ and other broadband technologies. It is plausible that IPTV (which streams TV programs using broadband connections and may be delivered over IP-based networks other than the internet) may be introduced in Australia in the future following the rollout of ADSL2+ access technology.

The tendency of users of broadband services spending more time online on average than dial-up users is widely acknowledged, but this is now becoming even more pronounced. Some overseas reports indicate that broadband users may spend 70 per cent more time online than dial-up users. In June 2005, the European Interactive Advertising Association reported that almost half of 15–24 year olds in Europe (46 per cent) are spending less time watching TV and 22 per cent are listening to the radio less as a result of using the internet.

Here in Australia, the joint NetAlert and Australian Broadcasting Authority (ABA) study *kidsonline@home* (2005) found that children aged 8 to 13 years are online younger and longer with the growth of broadband. Twice as many children with broadband connections as those with dial-up services accessed the internet at home daily.

Figure 6.4: Total data downloaded, quarters ending September 2004 and March 2005



Source: ABS Internet Activity, Australia, March 2005

CSP responses provided as part of ACMA's consumer benefits study (see Chapter 2) showed that combined broadband and narrowband download volumes increased by 158 per cent during the 12 months to 31 March 2005. Broadband volumes increased by 230 per cent, while narrowband grew relatively modestly, by 22 per cent.

The ABS reported that 14,124 million Megabytes of data was downloaded by subscribers over the March 2005 quarter, an increase of 28 per cent from the September 2004 quarter.

Household subscribers, representing 86 per cent of all subscribers, accounted for 75 per cent of all data downloaded. Non-dial-up subscribers accounted for 87 per cent of total data downloaded, reflecting the suitability of the service for downloading large files (such as videos).

6

## E-commerce

E-commerce not only includes shopping and conducting commercial transactions online, it extends to managing customer relations online, supply chain management and information management. Online auction sites such as eBay have entrenched themselves as alternative channels to traditional retailers over the last nine years. Consumers have access to goods that are not available in their local area and the lower overheads and visible competition often provide lower prices. This form of retail activity also encourages new businesses because potential entrepreneurs face reduced start-up costs and risk compared with traditional channels. In addition, the potential audience of more than 164 million registered users worldwide allows businesses to expand into new markets. Approximately 500,000 people in the United States run full or part-time businesses through eBay. Although there are also risks associated with e-commerce, the use of online reputation tools such as eBay's peer review system promotes user trust and confidence.

## Emails and instant messaging

In May 2005, Australia's largest ISP, Telstra BigPond, announced that it was transferring more than 20 million emails a day. In announcing their first annual profit, Australian online publisher ninemsn disclosed that there were 4.1 million Hotmail users and 2.9 million MSN Instant Messenger users in Australia. According to the *kidsonline@home* study, instant messaging (real-time communication for two or more people over a network) is used by 40 per cent of children aged 8 to 13 years.

## Online banking

The convenience and accessibility of online banking has continued to drive increased usage of these services. The Market Intelligence Strategy Centre reported in April 2005 that there were more than seven million Australian users registered for internet banking by the close of 2004, up from 1.3 million in 2000.

According to an AC Nielsen Consult survey in 2003, Net banking is usually used to check balances, view online statements, transfer funds and make payments. According to the Australian Bankers' Association, although security continues to be an issue due to high profile 'phishing' scams and password 'loggers', the losses caused by online fraud continue to be relatively low (\$25 million) compared with other types of fraud. Nevertheless, there are growing concerns about their relative significance and the rate at which these losses may be accelerating.

## User empowerment

Internet connectivity enables innovative forms of communication to develop independently of the network provider. It also poses challenges to the content industries in relation to the unauthorised distribution and reproduction of their copyright material. This section provides an outline of some recent developments to illustrate these trends.

### *Peer-to-peer networking*

Users can run applications over the internet without having to seek cooperation or permission of their ISP. Known as peer-to-peer (P2P) networking, this form of communication in effect transfers power (through the ability to create and distribute content and applications) from service providers to users.

P2P network architecture enables new forms of social interaction for users, including music or video file-sharing, making voice over internet protocol (VoIP) calls or sending instant messages to others. Regional or global peer networking can expand social, cultural and political spheres of interest for individuals or communities of interest that may in turn shape and influence local community values and standards.

Internationally, there have been industry reports that P2P networkers are consuming more bandwidth than other uses of the internet, such as web traffic, through exchanging comparatively large files (measured in Megabytes rather than kilobytes) such as videos and movies. In a report released in July 2004, Cache Logic found that worldwide, P2P file-sharing uses the most bandwidth on ISP networks. Cache Logic is able to identify what packets are going where, using deep packet inspection technology and so fits within the logical layer.

In Australia, the reported increase in data downloaded by subscribers is likely to be linked to the wider take-up of broadband and P2P file sharing.

The availability of network capacity and reliability of the data throughput rate (data download and upload rates) are likely to be of increasing importance to consumers as the growth in video and movie traffic continues. ISPs are able to control traffic volumes to some extent through pricing and technically-enforced data-rate limitations.

Much of the traffic across P2P networks consists of users sharing unlicensed copies of music and movies. In response to the use of P2P networks for copyright infringing activities, copyright owners have taken legal action in Australia and overseas against the distributors of some P2P applications such as 'Kazaa' and 'Grokster', as well as some individual overseas users of those P2P applications.

Although slightly outside the current reporting period, in the Australian Federal Court case, *Universal Music v Sharman Networks (2005) FCA 1242*, the court found in September 2005 that the distributors of the Kazaa P2P software had authorised the infringement of copyright in sound recordings by the software's users, but was careful to ensure that the P2P software continued to be available for non-infringing uses.

### *Podcasting*

'Podcasting' (using files downloaded from an internet-connected computer to an iPod or other portable digital MP3 player) is another form of content sharing that has become popular during 2004–05. The device works through application software that in effect turns consumers into producers and distributors of audio content.

*Weblogs*

Weblogs (blogs) are personal diaries maintained online where users share information through posting comments and inviting responses from others, and placing photos or other multimedia online.

While blogs are being used by tech-savvy early adopters, developments such as Google and Microsoft weblog services, together with broadband take-up, are taking weblogs into the mainstream. Technorati, a leading authority on weblogs, was tracking 7.8 million blogs globally in March 2005. By July 2005, this had increased to 14.2 million blogs, an increase of 82 per cent. At that time, Technorati was reporting that a new blog is created about every second (around 80,000 per day).

Blogs are becoming an important source of user-generated content, and a substitute for voice and email connectivity. Integrated blogs are also available where users can see which of their contacts are online and communicate with them in real time through instant messaging.

*Wikis*

Wikis are web pages that any internet user can use and edit such as Wikipedia, an open source encyclopaedia. Wikipedia has more than 250,000 user accounts and by October 2004, had more than 900,000 visits to its site per day.

*Voice over internet protocol*

Broadband connectivity is fuelling interest in using the internet to make voice calls through VoIP telephony, with some Australian ISPs conducting VoIP trials in 2004–05. The allocation of geographic numbers for VoIP services is outlined in Chapter 11.

## 6

Unlike traditional telephony, VoIP can be provided through application-layer software independently from the physical network provider and user's ISP. A leading provider of VoIP services internationally is Skype, using a form of P2P technology. In January 2005, research firm Evaluateserve estimated that Skype had attracted an estimated 13 million users worldwide, and that 80,000 subscribers were being added each day. Point-Topic estimated that there were more than 11 million users of retail VoIP services internationally by March 2005, up from five million at March 2004. Point-Topic's figures exclude computer-based 'soft-client' services such as Skype.

The popularity of VoIP service offerings (through low or zero cost calls and value-added data services) is likely to drive down revenues and profits of incumbent operators, although they still own and operate the copper access network that carries DSL and VoIP services. Some industry commentators describe potential VoIP developments as a massive discontinuity in the telecommunications industry that is likely to drive the convergence of voice and data much faster than anticipated.

**Trust and confidence**

Consumer trust and confidence in use of the internet is shaped and influenced through network integrity as well as quality of service, as discussed in this section.

*Complaints about internet services*

Table 6.2 shows the number of complaints received by the TIO by complaint type over the last three years. For 2004–05, the TIO reported that internet billing was the largest area of complaint for internet services, followed by customer service, faults and provisioning. Customer service complaints related to xDSL services increased in 2004–05. The increase is likely to be directly related to the increase in the number of providers offering xDSL services and the provision of almost one million new DSL connections for 2004–05—an increase of 138 per cent from June 2004. Concerns regarding the structural integrity of the xDSL networks and confirmation of availability were particularly prominent.

Table 6.2: Internet complaints received by the TIO, 2002–03 to 2004–05

Issue	Number of complaints		
	2002–03	2003–04	2004–05
Billing	3,347	3,233	4,248
Customer service	1,744	1,901	3,593
Faults	1,775	2,274	2,864
Provision	519	1,340	2,540
Contracts	746	786	1,571
Credit control	232	406	523
Disconnection	266	337	476
Churn	n/a	16	127
Privacy	60	95	70
Disability services	2	n/a	n/a
Total	8,691	10,388	16,012

Source: TIO  
n/a: not available

### Equitable access

Achieving equitable internet access is not just a matter of promoting physical access to an internet-connected computer or digital device. As the economic and social importance of the internet grows, information technology skills and the capacity or even the willingness to use the internet for e-government, e-commerce and personal communications services will continue to increase in importance. Information about current and future trends in communications-related participation and exclusion is essential for monitoring and reporting on industry performance.

Industry initiatives to improve accessibility for consumers, including accessible device and applications design, and simplicity of use—along with consumer education and awareness—are critical to the reach and take-up of internet services. For example, broadband internet access has the potential to enrich the lives of people with a disability through instant messaging, real-time video conferencing and audio technologies.

### Internet integrity

The ability of individual users and organisations to feel confident about releasing information into the network, or authenticating and verifying information that they access, is of critical importance to the success of the internet.

Perceptions of network integrity are multi-faceted, and incorporate internet security, information veracity, privacy, concerns about access to illegal or harmful content, and having the capacity to use the internet. Internet security is a subset and relates to prevention of access to, or use of, data and resources without authorisation. For example, the decoupling of the infrastructure and applications or content layers introduces new challenges for consumers and network providers. Customers may not be able to complain to their infrastructure provider about third-party supplied content.

Lying mainly within the applications layer, security threats such as computer viruses, direct denial of service attacks, identity theft, and spyware reduce user confidence and trust, damage the integrity of network services and can be costly to individuals and businesses. AusCERT, in its 2004 Computer Crime and Security Survey, reported that the number of organisations that had experienced electronic attacks in the previous 12 months had increased from 42 to 49 per cent. The most recent AusCERT survey, covering the 12 months to 28 February 2005, records that electronic attacks decreased to 35 per cent of organisations over this period. The most common form of electronic attacks was through infections from viruses, worms or Trojans.

### Spam

The United Kingdom Office of Fair Trading estimated that in 2004 spam accounted for 70 per cent of all email traffic on the internet, up from 50 per cent in 2003. The main source of mass-marketing spam is professional, global spammers and at 30 June 2005, Sophos, an international anti-spam service provider estimated that approximately one per cent of global spam came from Australian sources.

International spam monitoring agencies such as SpamHaus have estimated that some 200 professional spam gangs are responsible for 80 per cent of all global spam. In the past year, these professional spammers have increasingly turned to the use of ‘zombies’, or virus-infected computers, to relay their spam and hide their origin. SpamHaus is an international non-profit organisation based in the United Kingdom whose stated mission is to track the internet’s spam gangs, to provide dependable real-time anti-spam protection for internet networks, to work with law enforcement agencies to identify and pursue spammers worldwide, and to lobby governments for effective anti-spam legislation.

Table 6.3 shows the top 10 countries with the most spam issues notified by SpamHaus to ISPs currently providing connectivity and hosting to spam gangs that are directly responsible for the global spam problem.

Table 6.3: Countries with the most spam issues, 2005

Number	Country	Number of current listed spam issues
1	United States	2,516
2	China	434
3	South Korea	314
4	Russia	219
5	Taiwan	187
6	Japan	158
7	Canada	147
8	Brazil	123
9	Hong Kong	92
10	Argentina	92

Source: SpamHaus website – July 2005

Email spam may carry malicious content such as fraud, scams or cyber-crime. Telstra BigPond disclosed in its *Member News* in May 2005 that it rejects six million spam or virus-infected emails a day, or about 30 per cent of daily emails.

### Spyware

In the United States, there have been estimates that by the first quarter of 2005, up to 88 per cent of consumer computers had been infected with at least some kind of spyware.

Spam and spyware share the same trait of being unsolicited by internet users. Spyware is software that is installed on a computing device and takes information from it without the consent or knowledge of the user and gives that information to a third party. Perpetrators of spam and spyware appear to be motivated primarily by financial gains through online identity theft and fraud. Internet security concerns are likely to extend to VoIP, including spam over internet telephony (spit).

While there is no data on the numbers of potential internet users who may choose to avoid internet connectivity for personal safety or other reasons, some potential users may not want to connect to the internet because of viruses, spam and spyware.

## POLICY, REGULATORY, INDUSTRY AND USER RESPONSES TO INTERNET ISSUES

The internet is increasingly important for social and economic purposes, such as social networking and access to information as well as goods and services, including online banking, health and education. The global connectivity emerging through the internet has the power to influence and shape cultural mores, values and commercial activity. In global as well as local terms, broadband connectivity is expected to continue its rapid growth path over the next five years.

Having access to internet connectivity, and having the capacity to make use of it, as safely as possible, are escalating in importance as the internet grows. There is increasing awareness at the national and international governmental levels, as well as within industry and consumer groups, of the need to make the internet more robust and secure and to manage the risk of exposure to illegal or harmful content.

Pressure points include:

- growing awareness of the need to protect users from specified forms of digital content, such as illegal or harmful content;
- protecting copyright owners' rights in the online environment including the illegal use of P2P networks to distribute and reproduce copyright content;
- internet integrity and end-to-end security; and
- equitable participation.

The responses to such policy and regulatory pressure points could involve a mixture of government and industry regulation of the internet or industry-led improvements to the internet's architecture.

Measures and processes undertaken during 2004–05 are outlined in this section, from use of the criminal justice system, to government regulation, joint government–industry regulation, industry self-regulation and user education about their responsibilities. These activities involved a mixture of national and state government action, international collaboration with other jurisdictions and industry alliances.

The interventions outlined below range from the development of educational content, applications to block, filter or probe packet transmission, new protocols and standards at the logic layer, and the funding of new deployments at the physical layer. Governments, international bodies and forums, industry and users all have roles in the emerging internet governance space. Future industry performance measures may include responsibility for content and applications passed between users of their connectivity.

### Internet regulation

#### *Internet integrity*

In late 2003, the Australian government launched a five-part policy to address the global problem of spam, based on domestic legislation, technology, industry partnerships, consumer education and international cooperation.

The *Spam Act 2003* commenced in December 2003 and the penalty provisions came into effect in April 2004. In 2004–05, the overall level of Australian industry compliance with the Spam Act has resulted in the proportion of global spam originating from Australia falling from approximately two to one per cent. SpamHaus has confirmed that several major global spammers formerly based in Australia have ceased operating or left the country. One alleged global spammer who allegedly continued to operate from Australia has been taken to the Federal Court by ACMA and is awaiting court hearing.



ACMA works closely with other law enforcement bodies and regulators on criminal spam, including the Australian High Tech Crime Centre, the ACCC and the Australian Securities and Investments Commission.

Where a firm has breached the Spam Act, ACMA has taken enforcement action. In 2004–05, the industry was subject to the following enforcement activities:

- more than 200 companies or individuals received a warning to comply;
- five received fines;
- two entered into enforceable undertakings;
- five were subject to search warrants;
- five received and responded to ACA notices made under the *Telecommunications Act 1997* demanding information or attendance at a formal interview; and
- one alleged global spammer was the subject of proceedings in the Federal Court in relation to having sent more than 56 million commercial emails in the 12 months since the Spam Act commenced. That case was still before the court at 30 June 2005.

The industry now has greater awareness about how to comply as a result of this active enforcement and education program, including small business seminars, media interviews, consumer and industry guides, brochures and publications. In addition, the industry has a clear expectation that significant issues of non-compliance will be actively investigated and enforced by ACMA. This activity should reduce the incidence of spam originating in Australia.

Network security and efficiency issues may be addressed in part through the next generation protocol for internet addresses, IPv6, which will gradually replace the currently used IPv4. As well as providing many more IP addresses, other benefits of IPv6 deployment will be improved network configuration and security of packet transmission, and better support for applications such as videoconferencing and VoIP. The US Department of Defense is committed to upgrading its Global Information Grid to IPv6. Once the use of IPv6 reaches a critical mass, general migration to it would be inevitable.

6

Internet security developments in the logical layer, such as IP security (IPsec) and other developments such as network address translation (NAT), may extend the life of IPv4 (although IPsec is obligatory for IPv6 and optional for IPv4). IPsec is a standard for IP packet encryption and authentication, and forms part of the logical layer. While the use of NAT offers some security protection, it was developed originally to avoid IPv4 address shortages by local network users connecting to the internet through a single public IP address. The main disadvantages of NAT are that some protocols fail when intercepted by a NAT application, and the approach is inconsistent with the end-to-end principle.

DCITA released a discussion paper about spyware in May 2005 in response to the substantial increase in the amount of spyware circulating on the internet. This followed a legislative review into how existing Australian laws cover the malicious practices associated with spyware, which found that the most serious and malicious uses of spyware are already covered by existing legislation. The discussion paper identified potential responses including a review of the legal framework, industry best practice collaboration, international cooperation, technical approaches and consumer information and awareness-raising.

#### *Internet security initiative*

With a significant amount of spam being sent unknowingly by Australians whose computers have been hijacked, infected or ‘compromised’ by a virus, the true originator of the spam may well be located in another country. Professional spammers deliberately spread viruses and seek out compromised computers as a means of sending bulk spam while concealing their own identities.



The Australian Internet Security Initiative is a joint government–ISP project that aims to reduce the number of compromised computers in Australia. ACMA, DCITA and AusCERT have worked together to build a system to identify compromised computers and pass the information to the ISP, who in turn notifies their customer of the problem. The ISP may then take action depending on the circumstances and its policies. For example, an ISP may request the computer owner to immediately fix the problem or, if the computer is causing serious damage, it may be disconnected from the internet.

The initiative is being trialled with a small number of ISPs and is expected to be extended nationally in 2005–06. ACMA is also working with AusCERT to extend the project with partners across the Asia–Pacific region.

#### *World Summit on the Information Society*

The Working Group on Internet Governance (WGIG) was an expert group established by the United Nations to examine and advise on public policy issues about global aspects of internet governance. Topics considered by WGIG included policy oversight arrangements for the logical layer and promoting collaborative governance through coherent national policies. WGIG’s report, released in July 2005, will be considered at the United Nations World Summit on the Information Society in November 2005.

#### *International standardisation*

While the ITU convenes study groups into IP-based network end-to-end quality of service, Australian industry representation in such groups is limited.

#### *International agreements*

Australia is at the forefront of establishing anti-spam arrangements with other countries, including participation in the following:

- a multilateral Asian region Memorandum of Understanding (MoU) involving 12 communications and internet agencies from 10 countries and regions across Asia (the ‘Seoul–Melbourne’ MoU on countering spam);
- a bilateral MoU between Australia and Korea;
- a trilateral MoU between Australia, the United Kingdom and the United States;
- the London Action Plan—involving a law enforcement network with government and private sector organisations from 21 countries; and
- a statement of cooperation between Australia and the Kingdom of Thailand.

6

### **Online content**

Prohibited content on internet websites, newsgroups and P2P networks (excluding email and transitory content such as chat, VoIP and streamed multimedia) is regulated by ACMA. The prohibition applies to all content which would be classified as X 18+ or RC under the Office of Film and Literature Classification *Guidelines for the Classification of Films and Computer Games*, such as material containing child pornography, bestiality, high-level violence, real sexual activity or detailed instruction in crime, violence or drug use. Australian-hosted content which would be classified as R 18+ must be subject to a restricted access system that complies with the criteria determined by ACMA.

ACMA may direct an Australian internet content host to remove prohibited content from their service. If the content is hosted overseas, in accordance with the Internet Industry Association's internet content code of practice, ACMA may notify the suppliers about approved filtering products.

During 2004–05, the ABA received 1,145 complaints about offensive internet content. As a result, 48 take-down notices were issued to content hosts, 857 notices were issued to suppliers of internet filtering products, and 583 items were referred to law enforcement or overseas hotline authorities through INHOPE (International Hotline Providers Association). Complaints received per year by the ABA have more than doubled since the reporting scheme began in January 2000. However, internet usage has also doubled from 2000–01, according to the ABS.

To protect online content, the government has introduced a new legislative scheme that limits the remedies available against ISPs that assist copyright owners over copyright infringements that occur on their systems or networks. The new scheme was enacted via the *US Free Trade Agreement Implementation Act 2004*, the *Copyright Legislation Amendment Act 2004* and consequential amendments to the Copyright Regulations 1969.

The new scheme is voluntary and provides that, subject to compliance with certain conditions, ISPs cannot be the subject of court orders for monetary remedies, such as damages or an account of profits, where they have been found liable for copyright infringements that take place on their systems and networks. The number and nature of the conditions to be satisfied differs depending on the category of service offered by the ISP. For web-hosting and web-linking services, the conditions provide for a new notice and take-down scheme that will allow copyright owners to notify ISPs of suspect copyright infringements and require ISPs to expeditiously remove the material or link. The scheme incorporates mechanisms designed to protect consumers, including procedural fairness mechanisms such as counter-notices.

## 6

### Equitable access

#### *Digital data service obligation*

In October 1999, the government established the digital data service obligation (DDSO) to supplement the telephony-based universal service obligation, to ensure access to data services such as the internet. The DDSO is a legal requirement for a data service, faster than that available through a dial-up connection, to be accessible to all people in Australia on an equitable basis, wherever they live or carry on business.

The DDSO consists of two parts—a general obligation (the General DDSO) to provide access on request to a 64 kbit/s ISDN service, and a special obligation (the Special DDSO) to provide access to a comparable service delivered by satellite to consumers in areas that do not receive an ISDN service.

The DDSO is discussed in more detail in Chapter 8.

#### *Australia's National Broadband Strategy*

The National Broadband Strategy provides a policy framework for broadband development in Australia agreed by all levels of government. It is a mechanism to inform future policy development in broadband and coordinate activities across government.

The coordinated approach through the national strategy ensures that government investment in broadband supports regional priorities and the specific needs of key sectors, including health and education. This is leading to improved broadband infrastructure across the nation, ensuring that all Australians have fair and reasonable access to broadband and its benefits, particularly in reducing price and location barriers.

The implementation of the National Broadband Strategy is being overseen by the National Broadband Strategy Implementation Group (NBSIG). An action plan has been developed to accompany the strategy, which outlines the activities and initiatives being undertaken by all governments to implement the strategy. It outlines the approach to measuring progress and outcomes from the implementation of the strategy and presents this information annually. Each jurisdiction has also prepared individual action plans. These plans address the specific needs of each jurisdiction and the particular focus of each government within the overarching National Broadband Strategy.

Four major funding programs form part of the Australian Government's contribution to the action plan. The Higher Bandwidth Incentive Scheme (HiBIS); the Metropolitan Broadband Connect program; the Coordinated Communications Infrastructure Fund (CCIF) and the Demand Aggregation Broker Program have been designed to complement each other.

The NBSIG is supported by three working groups: the Measurements Working Group; the Digital Content Working Group and the Next Generation Networks Working Group.

#### *Higher Bandwidth Incentive Scheme*

The HiBIS provides subsidies to ISPs for supplying higher bandwidth services to people in regional, rural and remote Australia, so that the cost of these services is comparable to those in metropolitan areas. ISPs receive an incentive payment for each broadband service that they provide to residential, small business or non-profit customers. Subsidies are \$1,540 per service for households and small businesses that already have ISDN access, and \$3,300 for consumers without ISDN access.

As at 30 June 2005, there were 33 retail providers and two wholesale providers registered with HiBIS providing services to more than 34,000 HiBIS customers. The majority of customers (54.9 per cent) are connected by ADSL, followed by satellite (32.3 per cent), wireless (11.5 per cent) and cable (1.3 per cent). As at 30 June 2005, 585 Telstra exchanges in rural and regional towns had been upgraded to provide ADSL services under the HiBIS.

#### *Metropolitan Broadband Connect*

In May 2005, the Australian Government announced the creation of the Metropolitan Broadband Connect program to address the needs of metropolitan areas that are unable or unlikely to be able to obtain affordable broadband services in the near future because of problems with network infrastructure. Similar to HiBIS, this program will provide incentives to broadband service providers to create the infrastructure required for broadband access. The government is providing \$50 million over three years, commencing in 2005–06.

#### *Coordinated Communications Infrastructure Fund*

The government has also allocated \$23.7 million to the CCIF to fund broadband infrastructure projects that improve the delivery of health, education and government services in regional communities. The Minister announced on 6 April 2005 that six projects would receive funding from the second and final CCIF round, bringing the total number of funded projects to 13. Three of the seven networks funded in the first round are now operational, with all 13 projects being due for completion before 30 June 2007.

#### *Demand Aggregation Broker Program*

Government funding of \$8.4 million has established a network of demand aggregation brokers in regional, rural and remote areas of Australia. The purpose of demand aggregation is to coordinate demand at a regional level so there is a viable business case for rolling out infrastructure to areas that would not otherwise receive broadband services. Brokers develop broadband markets where there may be pockets of existing or potential demand, which are either too small or too isolated to be attractive to suppliers. Demand aggregation brokers seek to bring this demand together to increase the purchasing power of buyers to achieve more affordable pricing arrangements, greater choice and improved access to broadband.

The program includes three core elements:

- national brokers, to focus on multi-jurisdictional broadband initiatives in targeted areas such as the health and education sectors;
- state and territory based brokers, to work with governments and communities within a state or territory to develop demand aggregation projects, both across sectors and within particular geographic areas; and
- community-based brokers, to assist communities with the development and implementation of specific broadband demand aggregation projects.

#### *User education and accessible design*

To engage in the new forms of communications now emerging, or to access information and services (whether commercial or governmental) requires competency and capability in the use of computing and the internet, and accessible design at the consumer interface. Industry and government action in promoting user education and accessible design are matters of growing importance.

## Industry regulation

### *International*

Developmental and administration functions for IP address space allocation, top-level DNS management, and root server system management functions is the responsibility of the Internet Corporation for Assigned Names and Numbers (ICANN). ICANN is an internationally organised, not-for-profit corporation self-regulatory body representing both public and private interests. Other issues of concern to internet users such as content control, financial transactions, data protection and spam lie outside of ICANN's remit.

The Internet Society is a professional membership body formed to promote internet access and use. Membership comprises individuals, corporations, governments, organisations and universities from around the world. It has oversight of the main internet standardisation bodies, the Internet Engineering Task Force and Internet Architecture Board, which have important roles in coordinating the design of the TCP/IP protocol.

### *International cooperation – spam*

OECD countries formed a Task Force to Coordinate Fight against Spam in August 2004. An anti-spam tool kit was launched in September 2004 as a guide to policy makers, regulators and industry to combat spam. The taskforce has issued a number of reports outlining enforcement activities to combat spam and the need for international cooperation to address spam.

While each country needs to start by combating spam within its own jurisdiction, as Australia and others are doing, it is also important to work internationally to share solutions and intelligence, improve the security of the network and cooperate to close down international spam havens.

There is a well-established form of industry self-management of email through the block list system, whereby an email service provider may refuse to accept the traffic of another that is reputed to be a source of spam. This relatively informal system is a prospect for expansion to one of multilateral interaction between email service providers, internet associations, anti-spam technology providers and regulators.

The objectives of international cooperation can, subject to the legal provisions of the cooperating regimes, include direct law enforcement cooperation. However, the overall objective is to make the sending of spam simply bad business—if this can be achieved, the practice will stop, regardless of legislation.

During 2004–05, Australian representatives engaged in bilateral discussions with peer organisations in like-minded countries. While these are presently structured around regulator interactions, the expectation is that they will assist industry interactions that will develop an industry capability to address the spam issue, along with collateral issues of cyber-crime and online computer security.

*International cooperation – online content*

INHOPE, which is partly funded by the European Commission under the hotline component of its Safer Internet Action Plan, has member hotlines dealing with complaints about illegal internet content, mainly child pornography.

The ABA had been an associate member of INHOPE since September 2000 and became a full member in May 2004. It was represented at members' meetings in Salzburg in September 2004 and in Amsterdam in January 2005. Members' meetings provide a valuable forum for exchanging information and expertise on investigation techniques, hotline promotion, staff welfare, and other hotline management issues.

The Salzburg meeting focused on technical training to facilitate the tracing of online child pornography by hotline investigation staff. The meeting also provided the opportunity for the Personal Mobile Devices Working Group, chaired by the ABA and including representatives of hotlines from Austria, Germany, Italy, Korea and the United Kingdom, to formulate an agreed generic framework for procedures to deal with illegal content accessed via mobile devices.

At the Amsterdam meeting, the ABA updated INHOPE members on the findings of a consultancy performed by Network Strategies Limited, which provided advice on the technologies and commercial models being used to deliver content to mobile devices.

*Australian industry codes of practice and other industry initiatives*

Industry responses to spam and spyware may encompass a number of options, including:

- adaptation of best practice or standards-based design solutions at the physical (hardware) or application (software) layers, such as filtering and blocking;
- minimising user risk through educating and informing them about internet integrity risks;
- designing and installing software into the applications layer to block or screen out spam and spyware; and
- promoting the use of software that operates only through the informed consent of the computer user.

In the March 2005 quarter, there were 521 Australian ISPs (76 per cent) offering subscribers spam-filtering software, up by four per cent from the September 2004 quarter. Filtering product services varied, with 421 ISPs offering a free service, 43 offering a charged service and 57 providing both free and charged services.

During 2004–05, the global software and ISP industries, in conjunction with the ACA, worked together to apply technological measures to counter spam. Without favouring any provider in its awareness and education programs, the ACA promoted the use of tools for blocking spam and improving internet security. ISPs used tools such as filters, anti-virus and personal firewall software to restrict the amount of spam on their networks and to limit the propagation of spam across national infrastructure. Corporate and residential users also used the tools to improve their internet security, reduce incoming spam and deal appropriately with spam they do receive.

Two Australian businesses, the software company SpamMatters and an ISP, Pacific Internet, were key partners with the ACA in trialling a new type of spam forensics tool that enabled end-users to report spam directly to the ACA (now ACMA) for analysis. Consumer and business end-users can download this tool and use it to report spam directly from their personal computer. The system automatically provides the email header information and auto-analyses the spam for ACMA's investigations database. Phishing spam (which constitutes criminal fraud) is separately identified and on-reported by ACMA to the Australian High Tech Crime Centre. Several hundred Pacific Internet customers participated in a three-month trial, which concluded in April 2005. The reporting tool is expected to be made available to the wider Australian public in 2005.

The Australian e-marketing industry worked together with the ACA to develop a code of practice that sets industry-wide rules and guidelines for sending commercial electronic messages in accordance with the Spam Act. The e-marketing code provides practical guidance for the e-marketing industry toward best practice compliance with the Spam Act's provisions and sets a benchmark for the global e-marketing industry. It sets out processes and metrics for sending commercial electronic messages, and establishes a framework by which industry can itself handle complaints about spam and monitor industry compliance with the code provisions. The code automatically applies to all persons, including individuals and organisations, undertaking an e-marketing activity.

The e-marketing industry includes specialist e-marketing firms and firms who principally market their products using this means, including many major, legitimate senders of commercial electronic messages. The e-marketing code was developed by an industry committee comprised of representatives from direct marketing and advertising industry associations, e-marketers and consumer and small business groups.

The *Australian eMarketing Code of Practice* was registered by the ACA in March 2005. ACMA has the power to direct individual e-marketing firms to comply with it. While the code establishes industry self-regulation, its enforceability by ACMA is an important underpinning. The code provides for industry to actively resolve and monitor complaints where appropriate. Where complaints are not satisfactorily resolved or breaches of the code arise, ACMA may pursue enforcement action.

Compliance with the code should result in the reduction of complaints made to members of the e-marketing industry. The existence of the code will give the public greater confidence of the industry's compliance with the Spam Act and its ability to self-regulate on this issue.

The ISP industry began developing a code of practice for dealing with spam in mid-2004, through a consortium comprising the Internet Industry Association (IIA), the West Australian Internet Association and the South Australian Internet Association. The aim of the code is to detail practical steps that Australian ISPs, as carriers of email traffic, can take to reduce the amount of spam generated on their networks or delivered to them. It is expected that this code will be presented to ACMA for registration in 2005. Once registered, ACMA will be able to direct individual ISPs to comply with it.

In May 2005, the ABA registered three internet content codes of practice, replacing previous codes registered in 2002. Developed by the IIA in response to the government's May 2004 report on the operation of the co-regulatory scheme for internet content, the codes aim to improve users' access to information and internet safety tools, and to set out a process for dealing with internet content accessed using mobile devices such as mobile phones.

Development of the new codes took into account the findings of the ABA's audit in August 2004 of the compliance of the 10 largest Australian ISPs with their consumer information obligations under the previous codes. The audit indicated a high degree of compliance. Only iPrimus and AAPT were found to be not fully compliant with information disclosure requirements. Both ISPs have subsequently rectified their websites to be fully compliant with the codes.

It is possible that the rate of broadband provisioning and contract complaints may be reduced after the implementation of the new *Industry Code ACIF C620:2005 Consumer Contracts*, released in early 2005, which aims to reduce confusing contracts and prevent service providers from varying contract terms and conditions without providing an opportunity for the consumer to terminate the contract.

Information about the characteristics, including limitations, technical or otherwise, on the performance levels of ISP products and services, is in the *Industry Code ACIF C521:2004 Customer Information on Prices, Terms and Conditions*.

#### *Australian domain names*

The government has delegated responsibility for administration of the .au domain space to .au Domain Administration Ltd (auDA). As well as developing and implementing Australian domain name policy, auDA administers domain name registry functions, implements consumer safeguards and represents .au within ICANN and other international organisations. Information about the auDA's activities in 2004–05 is provided in Chapter 11.



## User awareness and responsibility

Users also have a role in maintaining network integrity through taking action to protect their computers or other internet-connected devices through the applications layer, such as installing firewalls and virus or spyware protection software. At the end of March 2005, 32 per cent of all Australian internet subscribers (1.9 million) had adopted a spam-filtering product offered by their ISP, an increase of more than 40 per cent from the proportion recorded at the end of September 2004. This excludes spam filtering software purchased or downloaded at no charge by subscribers from sources other than ISPs.

The *kidsonline@home* report emphasised the ongoing need to educate young people about online safety. ACMA operates a community awareness program, targeting children, parents and teachers. In June 2005, NetAlert launched a national roadshow to provide training and education for parents and teachers.

## SUBSCRIPTION TELEVISION

### Size and structure of the pay TV industry

#### *Industry structure and delivery systems*

Having been launched in January 1995, this reporting period marks 10 years of pay TV services in Australia. There has been little change to the size and structure of the pay TV industry from 2003–04 to 2004–05, with Foxtel, Austar and Optus continuing to dominate the provision of pay TV services.

Foxtel services are available through HFC cable to 70 per cent of homes in Adelaide, Brisbane, the Gold Coast, Melbourne, Perth and Sydney, by satellite to cities where cable is not available and throughout Western Australia. A total of 1.1 million homes are connected to Foxtel, including wholesale and retail services. Austar primarily offers digital pay TV services by satellite in regional and rural areas of Australia. Optus supplies services over its HFC network in Brisbane, Melbourne and Sydney.

Two optical fibre network operators supply pay TV services in discrete areas. Neighborhood Cable continues to offer pay TV services, internet access and VoIP service offerings in parts of regional Victoria. TransACT offers similar services, along with video-on-demand, to its Canberra and Queanbeyan customers.

Pay TV content is sourced from Australian and international media and communications companies.

#### *Pay TV subscribers*

Penetration rates for pay TV in Australia appear to have stabilised, with approximately 1.673 million households subscribing to pay TV services, compared with 1.581 million in June 2004. With approximately 3.2 residents per subscribing household, the approximately five million viewers represent a penetration rate of around 26 per cent of TV viewers (or around 21 per cent of households). This overall household penetration rate is much smaller than the world's most mature pay TV market, the United States, where 70 per cent of households are connected to pay TV services.

Industry sources indicated that there are in excess of 700,000 subscribers for digital pay TV, up from 310,000 in June 2004. The attractions of digital pay TV include access to more than 100 channels, interactive services and personalised digital recording, where users can program the device to watch what they want, when they want, and avoid advertising.

### Investigations into the pay TV industry

In January 2005, the ABA issued its final report into x-classified material broadcast into Australia from overseas locations. The investigation was triggered by concerns about the apparent availability of adult content being broadcast by satellite into Australia from overseas locations. The investigation commenced in March 2004 and concluded that specified satellite services were contravening class licence conditions as specified in the *Broadcasting Services Act 1992* and relevant codes of practice. The services investigated have now ceased broadcasting into Australia.

# special item

## **SPECIAL ITEM: SPAM**

Case study 1: internet pyramid marketing scheme	122
Case study 2: car trading advertising	122
Case study 3: racing tips software advertising	123

S2



## SPECIAL ITEM: SPAM

This special item discusses developments with spam in Australia and three case studies of the activities of Australian spammers during 2004–05, including enforcement action taken by the ACA under the *Spam Act 2003* in response to their activities. Chapter 6 provides more detail on the global nature of spam and the prevention and enforcement action taken by the ACA.

Spam or unsolicited commercial electronic messaging (especially email and SMS) is a serious global problem. More than 70 per cent of global email traffic is estimated by the global internet industry to be spam, which imposes costs on industry and end-users through lost productivity and increased IT costs. In addition, while most spam is unwelcome mass marketing, an estimated 10 per cent of email spam carries malicious content such as fraud, ‘scams’ or other forms of cyber crime.

The combination of factors that have exacerbated spam as a threat to consumers is succinctly summarised by the global software company Sophos Inc. in its May 2005 white paper, *The spam economy: the convergent spam and virus threats*, as follows:

Spammers, virus writers and hackers were once distinct communities with distinct motivations. However, the success of spam has brought the three together in an underground economy with a single purpose: to make money from unsolicited email.

Originally, spammers used their own servers and simply devised techniques to avoid blacklists (a list of known spammers, from which no email will be accepted). They progressed to disguising messages and disabling spam filters. Today, they rely on virus writers and hackers to provide a constant supply of servers to hide their identity and generate huge volumes of mail.

Before the passage of the Spam Act, a large proportion of spam received in Australia came from local businesses marketing their products. However, Australian businesses have been adjusting their practices and policies to comply with the Spam Act and the *Australian eMarketing Code of Practice*. At 30 June 2005, only one per cent of all spam received in Australia came from Australian sources.

In 2004–05, the ACA received more than 197,000 separate reports of spam through its newly developed public reporting and analysis system, purpose-built to collect spam for forensic analysis. While the majority of the reports related to spam received from offshore, a large proportion of the spam still being sent from Australia was from zombies (computers infected by a virus) in Australia being used by spammers elsewhere to relay spam. To combat this problem, the ACA initiated—and the ISP industry has supported—a joint ISP–government technology initiative that aims to identify and reduce the number of compromised computers in Australia.

During 2004–05, there have been more than 2,200 complaints about Australian businesses and individuals concerning spam. However, this figure is not indicative of the number of allegedly non-compliant businesses as the complaint data includes multiple complaints concerning individual parties.

A large, light-colored 'S2' logo is positioned on the right side of the page, partially overlapping the text area.

Analysis of these complaints has illustrated a trend in particular industries to use emails or SMS to market their businesses, for example, new and used car sales dealerships and nightclubs. To address this trend, the ACA ran targeted campaigns in 2004–05, including mail-outs and articles for industry publications, to educate these industries about compliance with the Spam Act. To date, industry’s response to this effort has been positive.

In 2004–05, the ACA required 200 local businesses to adjust their practices to comply with the Spam Act, issued infringement notices (on-the-spot penalties) to five businesses and accepted enforceable undertakings from three businesses.

UK-based international anti-spam organisation, Spamhaus, reported that most of the known alleged global spammers operating out of Australia before the commencement of the Spam Act had halted or left the jurisdiction. In June 2005, the ACA began proceedings in the Federal Court against one such company, which was alleged to have continued to operate from Australia.

The following case studies illustrate the various activities of spammers in Australia during 2004–05.

### CASE STUDY 1: INTERNET PYRAMID MARKETING SCHEME

In December 2004, a sole proprietor was the subject of complaints to the ACA about unsolicited emails. Investigations revealed that the sender of the emails was located in South Australia and a search warrant was obtained by the ACA to enable a search of the sender’s premises.

Analysis of the files seized during the search revealed that the respondent—an individual—was in possession of more than 20,000 email addresses, mass-mailing email software and email address harvesting software. The respondent had receipts for the purchase over the internet of some 5.5 million email addresses. The email message sent out by the respondent offered the opportunity to sign up to a pyramid-style marketing scheme and the text of the message clearly fell into the category of a commercial electronic message as defined in section 6 of the Spam Act. The respondent admitted to sending large numbers of unsolicited commercial emails to various addresses and buying email address lists over the internet.

The respondent was not the originator of the pyramid scheme, but had joined the scheme through an offshore website. In this case, ACA investigators determined that the most appropriate course of enforcement action was to seek an enforceable undertaking that the respondent would not engage in sending unsolicited commercial electronic messages in the future. The individual entered into the enforceable undertaking, was issued with an infringement notice and paid a \$660 penalty.

### CASE STUDY 2: CAR TRADING ADVERTISING

Between September 2004 and February 2005, the ACA received complaints about an organisation sending unsolicited commercial text (SMS) messages. Each complainant had advertised a car or motorcycle for sale in newspaper classified advertisements before receiving the text message. The messages were sent by a car trading company that copied the complainants’ mobile phone numbers, as published in the classified advertisements, to advertise the car trading company’s services and website.

The car trading company contended that people who had conspicuously published their mobile phone number to advertise the sale of their car should reasonably expect to be contacted and hence have given consent to receiving the messages. However, the Spam Act makes clear that consent cannot be inferred from the mere fact that an electronic address has been published.

The ACA determined that people selling cars published their mobile phone numbers in order to be contacted by potential buyers, not to receive text messages on their mobile phones advertising a car sales website. The messages were clearly unsolicited commercial electronic messages within the meaning of the Spam Act. The company was issued with an infringement notice with penalties of \$6,600 for breaching the Spam Act.

### CASE STUDY 3: RACING TIPS SOFTWARE ADVERTISING

Between June 2004 and January 2005, the ACA received complaints about a company sending unsolicited commercial SMS messages advertising its software that claimed to predict the winners of horse races.

Following an investigation, the ACA concluded that the company and a specialist e-marketer engaged by it had sent out more than 50,000 SMS messages in breach of the Spam Act. It appeared that the mobile phone numbers of the recipients were copied from telephone directories.

The two companies involved had engaged an offshore SMS messaging firm to do the physical sending of the SMS messages from offshore. It was argued that the sending of the messages was therefore not covered by the Spam Act. However, the Spam Act applies to any message with an 'Australian link'. In this case, the companies who authorised the sending of the messages were Australian companies and subject to the Act.

The ACA issued infringement notices to the two companies for breaching the Spam Act with total penalties of \$13,200. The specialist e-marketing company also gave an enforceable undertaking to comply with the *Australian eMarketing Code of Practice*.

S2

# chapter 7

## CHAPTER 7: SELF-REGULATION THROUGH CODES AND STANDARDS

Highlights	125
Code development and code signatories	126
<i>Codes registered</i>	126
<i>Codes under development or revision</i>	127
<i>Code signatories</i>	128
Code complaints and compliance	128
<i>Code complaints recorded by the Telecommunications Industry Ombudsman</i>	128
<i>Compliance with registered codes</i>	130
<i>Compliance with consumer codes</i>	130
<i>Compliance with network codes</i>	132
<i>Compliance with operational codes</i>	132
Technical standards	135
<i>Communications Technical Regulation Advisory Committee</i>	135
<i>Any-to-Any Text Connectivity Options Working Group</i>	135
Cabling regulation	136
<i>Licensed and registered cablers</i>	136
<i>Monitoring and enforcing compliance with cabling regulatory requirements</i>	137
<i>ACA review of the Cabling Provider Rules</i>	138
<i>ACIF review of the Wiring Rules Standard</i>	138
Australian industry involvement in international telecommunications standardisation	138
<i>Industry involvement and participation in international standardisation</i>	139
<i>World Telecommunication Standardization Assembly</i>	139
<i>The Asia-Pacific Telecommunity Standardization Program</i>	140
<i>ITU-T Study Groups</i>	141
<i>Consumer involvement in regional and international standards making</i>	142

7

## CHAPTER 7: SELF-REGULATION THROUGH CODES AND STANDARDS

This chapter discusses self-regulatory mechanisms and their effectiveness in 2004–05. It covers industry codes, technical standards, developments in the cabling industry and Australian participation at international telecommunications standards-making bodies and forums.

### HIGHLIGHTS

Highlights during 2004–05 included the following:

- The number of registered industry codes increased from 21 in 2003–04 to 25 in 2004–05.
- Four new industry codes were registered in 2004–05, together with five existing codes which were revised and registered. Three new codes were also being developed together with seven existing codes being revised.
- The number of companies signed up to at least one industry code increased from 17 in 2003–04 to 66 in 2004–05—due largely to the take-up by signatories of codes covering cabling and eMarketing.
- There was a 32.3 per cent increase in code-related complaints to the TIO, up from 5,111 in 2003–04 to 6,764 in 2004–05, resulting in a 21.4 per cent increase in confirmed and established code breaches, up from 485 in 2003–04 to 589 in 2004–05.
- There were significant increases in Telecommunications Industry Ombudsman (TIO) complaints relating to all five consumer codes.
- With the exception of the Mobile Number Portability (MNP) code, where compliance action against one provider was required, ACMA was satisfied with the extent of compliance with network and operational codes.
- There was an improvement in compliance with cabling requirements, based on the results of ACA audits and inspections. At 70 per cent, compliance was six percentage points higher than the previous year.
- There were approximately 55,000 licensed and registered cablers at 30 June 2005, representing a steady and sizeable employment sector in the telecommunications industry.
- Australia had a key role in the achievement of some important strategic outcomes at the October 2004 World Telecommunication Standardization Assembly, including the establishment of the Next Generation Networks (NGN) Study Group, and new resolutions on internet governance, spam and cybersecurity.

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.

### Codes registered

Four new telecommunications codes were registered by the ACA during 2004–05, taking the total number of registered codes to 25 at 30 June 2005. Twenty-three of these codes have been developed by ACIF, one by the Cabling Industry Committee and one by the Australian eMarketing Code Development Committee.

7

The four new codes are:

- The *Australian eMarketing Code of Practice* (the 'eMarketing Code') was developed by the Australian eMarketing Code Development Committee under the auspices of the Australian Direct Marketing Association. It aims to promote best practice use of commercial communications, including email, instant messaging and mobile wireless technology, in accordance with the *Spam Act 2003*. The eMarketing Code was registered by the ACA on 16 March 2005.
- *Industry Code ACIF C620:2005 Consumer Contracts* (the 'Consumer Contracts Code') aims to ensure that the terms of contracts between service providers and residential and small business consumers are fair and are presented by service providers in a form that is readily accessible, legible and capable of being readily understood by consumers. The code, formally requested by the ACA on 26 November 2003, was registered on 4 May 2005. It is discussed in more detail in Chapter 3.
- *Industry Code ACIF C554:2004 Rights of Use of Premium Rate Service Numbers* and *Industry Code ACIF C566:2005 Rights of Use of Numbers* (the 'Rights of Use Codes') define the rights of customers and the rights and obligations of carriage service providers (CSPs) in relation to particular telephone numbers. These two codes were registered by the ACA on 29 June 2005.

Five existing telecommunications codes were revised by industry and registered by the ACA during 2004–05. Existing codes are reviewed periodically, or following a request—either by ACMA, an industry body, industry representatives or consumer representatives—where a code is deemed to require updating to address gaps in consumer safeguards and operational procedures.

- *Industry Code ACIF C519:2004 End-to-End Network Performance for the Standard Telephone Service* (the ‘Network Performance Code’) was registered on 12 August 2004. The major amendment to this code is to the compliance testing and reporting obligations it places on carriers and CSPs, where testing and reporting obligations are now a matter of self-verification and self-attestation, in lieu of mandatory testing and reporting requirements.
- *Industry Code ACIF C547:2004 Complaint Handling* (the ‘Complaint Handling Code’) was registered on 25 August 2004. The revised code strengthens consumer safeguards and clarifies some existing provisions of the code.
- *Industry Code ACIF C564:2004 Deployment of Mobile Phone Network Infrastructure* (the ‘Mobile Network Infrastructure Code’) was registered on 7 April 2005. The revised code provides greater clarity in specifying the respective requirements for councils, carriers and community members arising from the code.
- *Industry Code ACIF C521:2004 Customer Information on Prices, Terms and Conditions* (the ‘Prices, Terms and Conditions Code’) was registered on 22 April 2005. The revised code has a more logical, concise style with rules and examples introduced about the internet and an improved section on mobile advertising.
- *Industry Code ACIF C559:2005 Unconditioned Local Loop Service (ULLS) Network Deployment Rules Code* (the ‘ULLS Code’) was registered on 20 May 2005. The revised code incorporates changes that facilitate the protection of the integrity of the telecommunications network when systems and services are operated on the ULLS, following further development of the internationally specified performance requirements for these systems.

### Codes under development or revision

Three new industry codes were under development during 2004–05.

- *Industry Code ACIF C617:2005 Connect Outstanding* was developed to specify the minimum requirements of carriers and CSPs to manage the timely connection of a new occupant’s standard telephone service in circumstances when the previous occupant has not yet cancelled their standard telephone service. The code was submitted for registration by ACIF in May 2005 and was registered by ACMA in August 2005.
- A code for internet service providers and electronic messaging service providers aimed at combating spam was under development following an ACA request on 22 July 2004 to the Internet Industry Association, in conjunction with the Western Australian Internet Association and the South Australian Internet Association. The code is expected to be submitted to ACMA for registration early in 2005–06.
- *Industry Code ACIF C625:2004 Accessibility Feature Information for Telephone Equipment* was developed to improve the accessibility to information about features of telecommunications equipment that would be useful to end-users with special needs. ACIF released a draft code for public comment in November 2004 and at 30 June 2005 comments received were being considered.

Seven existing codes were under revision during 2004–05:

- *Industry Code ACIF C546:2001 Customer Transfer* (the ‘Customer Transfer Code’)—a periodic revision partly to ensure consistency with state and territory fair trading legislation following recent changes;
- *Industry Code ACIF C541:April 2003 Credit Management* (the ‘Credit Management Code’)—revision follows consideration by the industry, the ACA and the Minister of issues surrounding unexpected high bills incurred by some consumers;
- *Industry Code ACIF C555:2002 Integrated Public Number Database (IPND) Data Provider, Data User and IPND Manager* (the ‘IPND Code’)—revision is primarily to ensure compatibility with the proposed IPND Industry Standard (discussed in Chapter 3);

- *Industry Code ACIF C540:2003 Local Number Portability* (the ‘LNP Code’)—a limited review to consider porting outside the donor network’s exchange area and to ensure consistency with state and territory fair trading legislation following recent changes;
- *Industry Code ACIF C531:2002 Commercial Churn* (the ‘Commercial Churn Code’)—a limited review to ensure consistency with state and territory fair trading legislation following recent changes;
- *Industry Code ACIF C515:2003 Pre-selection* (the ‘Pre-selection Code’)—a limited review to ensure consistency with state and territory fair trading legislation following recent changes; and
- *Industry Code ACIF C570:2003 Mobile Number Portability* (the ‘MNP Code’)—a limited review to ensure consistency with state and territory fair trading legislation following recent changes.

## Code signatories

The number of companies that have signed up to at least one telecommunications code increased from 17 in 2003–04 to 66 in 2004–05. This significant increase was a consequence of new signatories from the cabling and electronic marketing industries.

The eMarketing Code, registered on 16 March 2005, had 26 signatories at 30 June 2005 and the Cabling Requirements for Business Code, registered early in 2003–04, had 22 signatories at 30 June 2005 (this code had no signatories at 30 June 2004). The number of companies that had signed up to the 23 registered ACIF codes increased from 17 in 2003–04 to 18 in 2004–05.

Table 7.1: Number of companies signed up to at least one registered telecommunications code

	1999–00	2000–01	2001–02	2002–03	2003–04	2004–05
Signatories	3	7	11	17	17	66

At 30 June 2004, all codes with signatories were ACIF codes. The number of ACIF code signatories has declined steadily over the past three years—from 89 at 30 June 2003 to 76 at 30 June 2004 and then to 67 at 30 June 2005. This disappointing downturn is mainly due to a reduced number of signatories to newly revised codes, which possibly reflects:

- the time taken by suppliers to adapt to new processes spelt out in revised codes;
- delays in suppliers re-signing to codes; and
- industry uncertainty awaiting the introduction of an ACIF compliance mark.

There were 115 code signatories at 30 June 2005—67 for ACIF codes, 22 for the Cabling Requirements for Business Code and 26 for the eMarketing Code, comprising 66 separate companies.

## CODE COMPLAINTS AND COMPLIANCE

### Code complaints recorded by the Telecommunications Industry Ombudsman

The TIO had accepted conferral of powers for 14 registered codes at 30 June 2005 (up from 13 at 30 June 2004). This conferral of powers authorises the TIO to handle small business and consumer complaints relating to the provisions of these codes.

Table 7.2 shows the number of complaints to the TIO during 2004–05 relating to provisions of the codes for which the TIO has accepted conferral of powers. Complaints are recorded under the following TIO categories:

- *Potential breach*—a level 1 complaint against a **code signatory**, where the complaint refers to a code rule and has not been investigated by the TIO;
- *Possible breach*—a level 1 complaint against a **code non-signatory**, where the complaint refers to a code rule and has not been investigated by the TIO;



- *Confirmed breach*—a complaint escalated to level 2 or above against a **code signatory**, where the TIO investigation has confirmed a breach of the code; and
- *Established breach*—a complaint escalated to level 2 or above against a **code non-signatory**, where the TIO investigation has established a breach of the code.

Table 7.2: TIO complaints – code breach complaints by code, 2002–03 to 2004–05

Code name#	Short name	2002–03	2003–04	2004–05 Total	2004–05 Potential & Possible	2004–05 Confirmed & Established
ACIF C541:April 2003 Credit Management	Credit Management	916	1,100	1,472	1,341	131
ACIF C542:February 2003 Billing	Billing	1,001	1,412	1,463	1,341	122
ACIF C547:2004 Complaint Handling	Complaint Handling	851	934	1,280	1,112	168
ACIF C546:2001 Customer Transfer	Customer Transfer	796	792	1,226	1,162	64
ACIF C521:2004 Customer Information on Prices, Terms and Conditions	Prices, Terms & Conditions	211	434	585	553	32
Industry Guideline ACIF G601:2002 Consumer Contracts	Consumer Contracts Guideline	9	117	291	249	42%
ACIF C531:2002 Commercial Churn	Commercial Churn	159	185	208	196	12
ACIF C570:2003 Mobile Number Portability	MNP	85	34	158	147	11
Industry Guideline ACIF C523:2001 Protection of Personal Information of Customers of Telecommunications Providers	Customer Personal Information (not registered)	124	83	60	56	4
ACIF C609:2003 Priority Assistance for Life Threatening Medical Conditions	Priority Assistance	n/a	6	7	5	2
ACIF C525:2002 Handling of Life Threatening and Unwelcome Calls	Handling Unwelcome Calls	12	9	6	6	0
ACIF C580:December 2002 Short Message Service (SMS) Issues	SMS	n/a	3	3	3	0
ACIF C522:2001 Calling Number Display	CND	3	0	2	2	0
ACIF C515:2003 Pre-selection	Pre-selection	0	2	2	2	0
ACIF C540:2003 Local Number Portability	LNP	n/a	0	1	0	1
	Total	4,167	5,111	6,764	6,175	589

*n/a: not applicable*

*# Each entry is an industry code unless otherwise specified*

Registered codes are available through the Register of Industry Codes on the ACMA website at [www.acma.gov.au](http://www.acma.gov.au) > Industry > Codes > Register of Codes.

The TIO received 6,764 complaints relating to these codes, an increase of 32.3 per cent on the 5,111 complaints received in 2003–04. TIO complaints relating to specific codes are discussed in the following sections. TIO investigations confirmed or established 589 breaches, an increase of 21.4 per cent on the 485 from the previous year. The remainder were potential and possible breaches.

## Compliance with registered codes

In 2004–05, the ACA approached the nine largest carriers and CSPs with a questionnaire about their compliance with all registered codes. In addition, questions about particular codes were sent to 24 other organisations, on the basis that their responses might better inform ACMA about the extent of code compliance throughout the industry. ACIF code signatories were not required to respond to the ACA's questionnaire because signatories to ACIF codes report compliance to ACIF against a checklist that outlines the main code requirements, and ACIF then reports this information to ACMA. ACIF reported no issues of non-compliance in 2004–05.

Responses to all relevant questions were received from 1410 Communications, AAPT, Astar, Baycorp Advantage, Commander, Direct Telecom, FCS Online, Hutchison, IP Systems, Mibroadband, Optus, PowerTel, Primus, RSL COM, Telstra, TransACT and Vodafone. No responses were received from Axiom, Alterna, Chime, Globalstar, Go Talk, ihug, MCI, m8, Pacific Micromarketing, Request DSL, SIMplus, Telecorp, TPG, Virgin or Western Power. A partial response was received from Macquarie Telecom. SIMplus plans to commission an independent audit of its performance against relevant telecommunications industry codes. While this undertaking is noted favourably, ACMA also notes that SIMplus was unable to verify its compliance against the relevant codes during 2004–05.

Based on code compliance assessment activities:

- the ACA found non-compliance by industry participants with the MNP Code, leading to the issuing of a formal warning and direction to Vodafone to comply with the code;
- ACMA notes significant increases in complaints to the TIO about all five consumer codes—Credit Management, Billing, Complaint Handling, Customer Transfer, and Prices, Terms and Conditions; and
- ACMA is generally satisfied with industry compliance with the other registered codes.

# 7

## Compliance with consumer codes

### *Credit Management Code*

During 2004–05, the TIO recorded 1,472 complaints relating to the Credit Management Code, a 34 per cent increase on the 1,100 complaints recorded in the previous year. Complaints about eight CSPs made up 93 per cent of total complaints. The highest numbers of complaints were about Telstra (600), Optus (235), Hutchison's combined Orange and '3' networks (197) and AAPT (159).

Of the complaints received by the TIO against the Credit Management Code, 131 were found to be established or confirmed breaches, compared with 85 in 2003–04

Hutchison, RSL COM, TransACT and Vodafone provided evidence of credit management practices likely to ensure code compliance. While Primus provided evidence of compliance with most code rules, it does not have a specific process for assisting customers with payment difficulties, a requirement under the current Credit Management Code.

### *Billing Code*

The TIO recorded 1,463 complaints relating to provisions of the Billing Code in 2004–05, compared with 1,412 in 2003–04 and 1,001 in 2002–03. Of the 1,463 complaints recorded in 2004–05, 122 were established or confirmed compared with 72 in the previous year. Complaints about nine CSPs made up 81 per cent of complaints. The highest numbers of complaints were about Telstra (410), Optus (281), Hutchison (132) and AAPT (121).

Of those non-signatories to the code who provided a response to ACMA about policies and procedures, Vodafone and Primus supplied comprehensive information about procedures for ensuring compliance.

#### *Complaint Handling Code*

During 2004–05, the TIO recorded 1,280 complaints relating to the Complaint Handling Code, a 37 per cent increase on the 934 complaints in the previous year. The highest numbers of complaints were about Telstra (400), Optus (180), Hutchison (137) and Primus (76).

Of the complaints received by the TIO against the Complaint Handling Code, 168 (13.1 per cent) were found to be established or confirmed breaches, a decrease of three per cent on the 174 established or confirmed complaints recorded in the previous year. This is the highest proportion of confirmed and established breaches among the five consumer codes and suggests that this is an area which requires further regulatory scrutiny.

Telstra, TransACT and Vodafone provided demonstrable evidence of complaint handling protocols likely to ensure code compliance. Primus and AAPT provided evidence of compliance with most code rules.

#### *Customer Transfer Code*

The TIO reported that 1,226 complaints relating to the Customer Transfer Code were received in 2004–05, an increase of 55 per cent on the 792 complaints received in 2003–04. The highest numbers of complaints were about AAPT (269), Optus (183), 1410 Communications (157) and Kooee (130).

Of the 1,226 complaints received, 64 were confirmed or established breaches.

There has been an increase in complaints relating to telemarketing, which has been the greatest source of transfer complaints. Major sources of complaints include:

- that some suppliers have been misleading in expressing their affiliations with other suppliers;
- identification and establishment of the customer authorised to transfer a service;
- the quality of voice recordings kept to demonstrate that the transfer has been authorised;
- requests by consumers for information from suppliers which result in the unauthorised transfer of customers; and
- the transfer of xDSL services, an emerging issue.

ACMA received information from six non-signatory service providers about their compliance with the Customer Transfer Code. Responses received from 1410 Communications, Commander Group, Direct Telecoms, Telstra, TransACT and Primus indicated that these services providers had processes in place which would generate compliance with the Customer Transfer Code.

#### *Prices, Terms and Conditions Code*

The TIO recorded 585 complaints relating to provisions of the Prices, Terms and Conditions Code in 2004–05, compared with 434 in 2003–04 and 211 in 2002–03. Of the 585 complaints recorded in 2004–05, 32 were established or confirmed. Complaints recorded by the TIO against the code are distributed broadly among CSPs, with the highest numbers of complaints recorded about Telstra (163), Optus (88), Hutchison (86) and Orange (72).

Of those non-signatories to the code who provided a response to ACMA about policies and procedures, Telstra and Hutchison supplied comprehensive information about procedures for ensuring compliance. Primus also supplied information about procedures for ensuring compliance.

Vodafone and TransACT attested that they complied with the Prices, Terms and Conditions Code and provided brief supporting statements.

## Compliance with network codes

### *Network Performance Code*

Telstra, as the sole signatory to the Network Performance Code, provided an initial attestation of compliance, as required by the code.

Of the non-signatories, AAPT, Hutchison, Optus, PowerTel, Primus, TransACT and Vodafone provided information to ACMA in support of their claims that they meet the performance requirements of the code. Hutchison, TransACT and Vodafone provided test results in support of their claim.

### *Unconditioned Local Loop Service Code*

AAPT, Optus and Primus provided clear statements that they operate systems using the unconditioned local loop service and comply with the obligations of the ULLS Code and its associated deployment classes.

### *Call Charging and Billing Accuracy Code*

As signatories to the *Industry Code ACIF C518:June 2000 Call Charging and Billing Accuracy*, Optus provided a self-attestation compliance statement, and Hutchison/Orange (2G), Telstra and Macquarie provided information to support their claims to meet the requirements of the code. Hutchison 3G provided an independent verification statement, as per the requirements of the code for new signatories, indicating compliance with the requirements of the code.

MCI WorldCom tests its network against the *Quality Assurance Manual* in accordance with the requirements of the Office of the Telecommunications Authority (OFTA) in Hong Kong. ACIF has made no comment about this approach or provided an assessment of the OFTA requirements in relation to this code.

Of the non-signatories, AAPT, PowerTel, Primus, TransACT and Vodafone provided information to ACMA in support of their claims to meet the requirements of the code. ACMA was concerned about PowerTel's reliance on the high standards of its equipment suppliers to ensure its compliance with the code.

## Compliance with operational codes

# 7

### *Mobile Number Portability Code*

Mobile number portability (MNP) in Australia works on the basis of industry collaboration. It provides the ability for a customer to port in minutes in circumstances where all participants' systems are operating efficiently. However, the difficulties of one industry participant may impact adversely on the porting performance of all industry participants.

The MNP Code outlines the operational processes and procedures for the efficient and effective implementation of MNP. The code requires industry participants to complete:

- 90 per cent of mobile number ports within three hours; and
- 99 per cent of mobile number ports within two days.

Under the MNP Code, industry performance against these measures is assessed on a quarterly basis.

As shown in Table 7.3, the industry did not comply with all aspects of the MNP Code during 2004–05, with industry compliance against both performance measures only recorded in the final quarter. This poor performance is supported by the increased number of complaints that were recorded by the TIO—158 complaints—an increase of 365 per cent from 2003–04.

Table 7.3: Industry mobile number porting performance, 2004–05

Quarter	Within 3 hours	Within 2 days
July–Sep 04	77%	98%
Oct–Dec 04	72%	98%
Jan–Mar 05	78%	99%
Apr–Jun 05	91%	100%

During late 2004, the ACA became aware of Vodafone systems problems as a result of correspondence received from Hutchison, Hutchison 3G, Optus and Telstra. Following an assessment of industry complaints and a review of Vodafone’s performance, on 25 November 2004 the ACA issued a formal warning to Vodafone to comply with the MNP Code.

Vodafone’s performance did not improve subsequent to this warning, despite the implementation of a remediation plan to address its systems issues. Accordingly, on 23 December 2004 the ACA formally directed Vodafone to comply with the MNP Code. Vodafone requested a review of the ACA decision to issue this direction. The ACA review upheld its original decision.

In parallel to communications with Vodafone, the ACA also launched an investigation into the performance of Australia’s mobile phone carriers in delivering MNP. The ACA issued a direction under section 581 of the *Telecommunications Act 1997* to all mobile carriers—Hutchison, Hutchison 3G, Optus, Telstra and Vodafone—to provide information to the ACA about their MNP processes. The ACA found that all mobile carriers experienced outages and slow response times that impacted on their performance.

The industry worked together to identify and resolve problems associated with the MNP process. In particular, the industry considered that self-regulation could be used to manage non-compliance with the MNP Code. While industry participants recognised that the MNP process can cope with some systems issues, serious systems issues need to be escalated and addressed by all participants. Accordingly, the industry developed and implemented a process to deal with such issues in the future.

In the final quarter of 2004–05, MNP performance stabilised and the ACA concluded its investigation, determining that no further action was necessary. ACMA will continue to monitor MNP performance. More information about MNP is in Chapter 11: Facilitating competition.

7

#### *Pre-selection Code*

Responses from non-signatory providers indicate that AAPT, Optus, Primus and TransACT are compliant with the main elements of the Pre-selection Code.

Optus and TransACT reported that they have effective processes in place to invite their new customers to choose a pre-selected provider.

Primus is currently making arrangements with one other carrier to offer pre-selection. Primus reported that it only offers direct access services to customers who buy a bundled product that includes the use of Primus for pre-selection. Primus also stated that customers are able to use over-ride codes to bypass this arrangement on a call-by-call basis.

While AAPT did not provide a comprehensive response on this issue, its overall response suggests that it has similar arrangements in place.

AAPT, Optus and TransACT reported appropriate arrangements to perform verification or quality control on their staff, agents or dealers responsible for activating customer’s pre-selection choices.

All respondents reported that appropriate arrangements have been implemented to ensure that participants confirm with a customer that a cancellation of a service has occurred rather than a change of service address.

Legislative provisions exist for ACMA to grant exemptions to carriers or CSPs from compliance with their pre-selection obligations. During the reporting period, one exemption remained in force for calls made from fixed services supplied by means of Telstra's Communic8 residential fixed service product (previously known as homeZip).

#### *Local Number Portability Code*

AAPT, Optus, Primus and TransACT provided responses to requests for information on compliance with the LNP Code. All four CSPs were able to demonstrate that they have adequate systems in place to:

- ensure that only validly authorised customers are able to port;
- advise customers who wish to port that any changes to their service may affect porting;
- use paper, recorded voice and electronic applications for customer authorisation storage and retrieval; and
- have appropriate number quarantine arrangements in operation.

More information about LNP is in Chapter 11: Facilitating competition.

#### *Commercial Churn Code*

Telstra reported that it met its requirements to process customer requests within specified timeframes as the Access Service Deliverer under the Commercial Churn Code in each month of 2004–05.

Accordingly, the ACA found overall industry compliance in relation to this code to be satisfactory. However, the TIO recorded 208 complaints during the reporting period. ACMA considers that it may be timely to review the appropriateness of this code.

#### *Mobile Network Infrastructure Code*

Compliance with the Mobile Network Infrastructure Code is generally satisfactory. More than 1,100 low-impact communications facilities were deployed during 2004–05 and the very low number of compliance issues raised indicates that carriers are generally operating in accordance with the code.

7

During the reporting period, the ACA received 42 complaints about 25 sites, which is consistent with the number of complaints about sites received during 2003–04. Many complaints concerned issues outside the scope of the code, such as dissatisfaction with the site selected and the possible health effects of electromagnetic emissions. The majority of complaints within the scope of the code raised issues with carriers' consultation practices.

In 2004–05, the ACA finalised an informal investigation into compliance with the code for an Optus site. Substantive compliance issues had been raised by members of the community in 2003–04 regarding the consultation requirements of the code. The ACA found that Optus had not breached the code, but provided detailed feedback to Optus about its consultation practices. This feedback has been accepted and implemented by Optus.

Ongoing dialogue between carriers and the ACA has resulted in an improved understanding of code requirements. Carriers have reported that they are strengthening their operational consultation practices.

#### *Integrated Public Number Database Code*

Responses to the ACA from non-signatory providers indicated that data providers are taking positive steps to meet their obligation under the IPND Code to provide accurate and complete customer data to the IPND Manager. Some data providers have taken steps to enhance their systems, largely prompted by the audits of the IPND undertaken by the ACA to measure data accuracy.

Information about the operation of the IPND, including the audit of IPND data, is in Chapter 10: National and community interests.

#### *Other operational codes*

ACMA has no concerns about compliance with the Calling Number Display Code, the Handling Unwelcome Calls Code, the Priority Assistance Code, the *Industry Code ACIF C536:2003 Emergency Call Services Requirements* or the *Industry Code ACIF C513:2004 Customer and Network Fault Management*.

## TECHNICAL STANDARDS

### Communications Technical Regulation Advisory Committee

The Communications Technical Regulation Advisory Committee (CTRAC) was established to provide strategic policy advice and recommendations to the ACA about the compliance framework for technical regulation of communications in Australia.

In August 2004, the ACA restructured the membership of CTRAC to balance its representation across the wider communications sector. Appointment to CTRAC is for a period of two years. The first meeting of the reconstituted CTRAC was held on 11 November 2004. CTRAC meeting minutes, terms of reference and membership are on the ACMA website.

### Any-to-Any Text Connectivity Options Working Group

The deployment of digital mobile communications by carriers has created challenges and opportunities for people with disabilities. The challenges relate to the incompatibility of equipment such as teletypewriters (TTYs) with digital technologies.

The TTY is used by people with hearing or speech impairment as an alternative to the voice telephone. Access to mobile services by this sector of the community was diminished when the analog mobile phone network was closed because GSM and CDMA digital networks are not able to carry the voice frequency signalling of the TTY.

ACIF's Any-to-Any Text Connectivity Options (TATA) Working Group investigated possible solutions with the aim of restoring mobile real-time text communications for people with hearing and speech impairment. Various communications devices were evaluated by the TATA Working Group.

Of the devices evaluated, a number of particularly successful combinations were identified from mainstream communications products and services, including mobile TTY devices and personal digital assistants. As a result of identifying these devices, the market is now aware of what products meet the needs of people with hearing and speech impairment and those products that do not.

The mobile TTY devices have subsequently been tested by carriers to ensure interoperability with access and transmission technologies used in their networks. The devices are currently undergoing further evaluation by disability groups to assess their useability.

In October 2004, the TATA Working Group reported to DCITA on its activities and made recommendation. The group recommended the establishment of a 'text server' that would support the inter-working of the various text communication services.



## CABLING REGULATION

The cabling industry is continuing to take steps to improve the quality of cabling in the marketplace and take on greater responsibility for its own regulation. Consumers can only benefit from improved cabling practices.

The beginning of the reporting period saw the first cabling business sign up to the industry developed the Cabling Requirements for Business Code. The number of code signatories increased to 22 by 30 June 2005. Cabling businesses that sign up to the code are required to demonstrate to an ACMA-accredited assessor that they have quality business systems in place to comply with the code.

Registered by the ACA in July 2003, the code requires businesses engaging in cabling activity to ensure that cablers working on their behalf perform work in accordance with the *Telecommunications Cabling Provider Rules 2000* (the ‘Cabling Provider Rules’). The code aims to improve the quality of cabling work by promoting client safety and network integrity, thereby assuring clients that work is consistent with industry standards. Code requirements supplement the responsibilities that the Cabling Provider Rules place on individual cablers.

Since the Cabling Requirements for Business Code was introduced, the level of cabling compliance has improved (see this chapter under Monitoring and enforcing compliance with cabling regulatory requirements).

The code was developed by the Cabling Industry Committee, which comprises representatives from cabling industry associations, cabling industry registrars, Optus and Telstra.

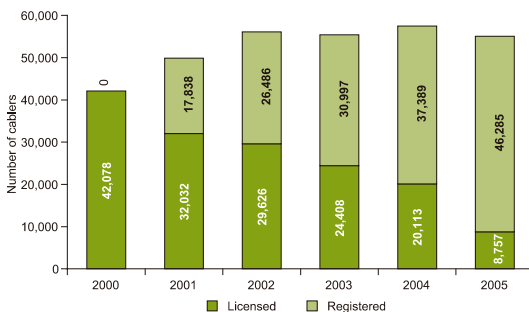
### Licensed and registered cablers

All individual cablers are required to be licensed or registered with an ACMA-accredited registrar. Trends in licence and registration numbers provide an indication of changes in the size of the customer cabling industry.

On 30 June 2005, there were 8,757 licensed cablers and 46,285 registered cablers. Figure 7.1 shows that the number of customer cablers in the industry has been relatively stable since 30 June 2002. The growth in the number of cablers to 30 June 2002 reflects a regulatory policy change introduced on 3 October 2000 to require cablers in the data, security and fire industries to register under the Cabling Provider Rules.

7

Figure 7.1: Number of cabling licences and registrations, 30 June 2000 to 30 June 2005.



The industry-managed cabling registration scheme is continuing to operate effectively, with the number of registered cablers under the scheme steadily increasing (see Figure 7.1). The transfer of cablers from the licence system to the registration system will be completed when the last licences expire in October 2005.

The five accredited registrars provide cablers with registration and other associated services. Registrars offered four types of registration during 2004–05—open, restricted, lift and, until 3 October 2004, transitional.

Transitional registration was introduced as an interim measure to allow cablers in the security, fire and data industry—who were not required to

have a cabling licence under the previous scheme—time to update their skills, if necessary, for registration under the new registration scheme. After 3 October 2004, transitional cablers were required to transfer to one of the other cabling types if they wished to continue undertaking cabling work.

All cablers must meet ACMA competency requirements that address health, safety and network integrity issues before being granted registration.



## Monitoring and enforcing compliance with cabling regulatory requirements

The ACA monitored cabling compliance through activities including a contracted audit program and its own inspection program. The results of monitoring activity in 2004–05 (508 random inspections and 383 audits) indicated that the level of compliance with the cabling requirements is 70 per cent. This result compares favourably with previous years, but indicates that there is still room for improvement (see Figure 7.2).

The major area of non-compliance is the failure to adequately separate or segregate communications cabling from electrical cabling (43 per cent) (see Table 7.4).

Requirements relating to separation are set out in the standard *AS/ACIF S009:2001 Installation requirements for customer cabling (Wiring Rules)* (the ‘Wiring Rules Standard’) and are intended to protect the health and safety of cablers and customers. Inadequate separation may also increase interference and adversely affect the delivery of voice and broadband services. However, inadequate separation may not be in the control of the communications cabler, because electrical cabling is often installed by an electrical contractor after the communications cabling has been completed. As a result, care should be taken in the interpretation of results.

Table 7.4: Cabling violations by type, 2004–05

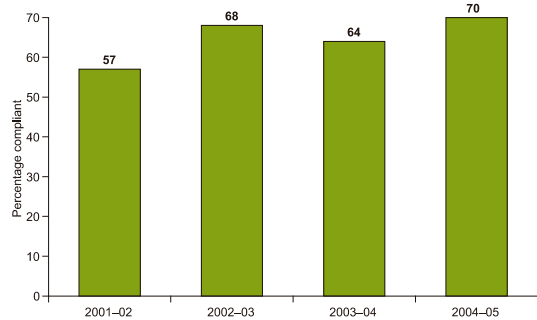
Violation type	Number detected	Percentage of all violations
Inadequate separation of cabling work	191	43%
Distributors & record keeping violations	25	6%
Inadequate securing of cables	38	9%
Other wiring rule violations	50	11%
Non-certification of cabling work	71	16%
Unregistered or unlicensed cablers	55	12%
Non-compliant cabling product	14	3%
Total	444	100%

During the reporting period, the ACA’s compliance work resulted in the issuing of 12 notifications of non-compliant cabling, 14 advice notices and nine warning notices.

ACMA can impose financial penalties for certain breaches of technical regulations instead of having to prosecute offenders through the court system. For individuals found to be performing unauthorised cabling work, a penalty of \$1,320 applies for each offence under the telecommunications infringement notice scheme. No penalties were imposed and no prosecutions have been undertaken during the reporting period.

ACMA expects that improvements in cabling compliance will continue to follow from the steps that industry is taking to encourage participation in the Cabling Requirements for Business Code.

Figure 7.2: Compliance assessed from audit and inspections, 2001–02 to 2004–05



Another initiative supported by industry that is expected to lead to improvements in the quality of cabling installation and maintenance practice compliance is the development of skills maintenance programs for cablers. On 15 December 2004, the Cabling Industry Committee wrote to the ACA advising its intention to develop an industry code to regulate the delivery of skills maintenance programs for cablers. ACMA is providing secretariat support to the industry committee. The target date for the release of the draft industry code for industry comment is the second quarter in 2005–06.

Results of an ACA-commissioned survey of 642 cablers in July 2004 suggested that 87 per cent of cablers support the introduction of a voluntary skills maintenance program. There was less support for the introduction of a mandatory program (68 per cent). The survey was conducted by Roy Morgan Research Pty Ltd.

ACMA activities to increase awareness of cabling requirements and the implementation of compliance monitoring programs are also expected to contribute to improvements in the level of compliance in 2005–06.

### ACA review of the Cabling Provider Rules

In September 2004, the ACA released a discussion paper to commence a review of the Cabling Provider Rules. The ACA initiated the review to ensure that the rules keep pace with changes in the industry, to explore opportunities for extending self-regulation and to examine issues that have been raised by industry since the rules were introduced in October 2000.

The ACA received 13 submissions to the review and released its findings in June 2005 together with proposed amendments to the Cabling Provider Rules. The proposed amendments are subject to a mandatory 60-day consultation period.

The proposed changes to the Cabling Provider Rules will tighten the rules in some areas and relax them in others to reflect current industry practice and regulatory experience. Proposed amendments include tightening the certification requirements for registered cablers supervising unregistered cablers and exempting certain types of minor cabling work from the obligation to be certified.

### ACIF review of the Wiring Rules Standard

Under the Cabling Provider Rules, cablers are required to install cabling work in accordance with the Wiring Rules Standard. This industry developed standard defines the technical requirements for the installation and maintenance of customer cabling. ACIF is currently reviewing this standard and *AS/ACIF S008:2001 Requirements for Authorised Cabling Products* to, among other things, ensure there is greater harmony between the standards. The reviews are expected to be completed by the end of 2005.

## AUSTRALIAN INDUSTRY INVOLVEMENT IN INTERNATIONAL TELECOMMUNICATIONS STANDARDISATION

ACMA manages Australian input into the setting of international standards for telecommunications, as required by section 8 of the *Australian Communications and Media Authority Act 2005*, except where Standards Australia is responsible for managing that input. In practice, this means that Standards Australia manages input into international telecommunications standards made by the International Organization for Standards (ISO) and the International Electrotechnical Commission (IEC).

Technical input into regional and international standardisation, including through the International Telecommunication Union – Telecommunication Standardization Sector (ITU-T), is developed by Australian industry, together with consumer and user representatives, in conjunction with ACMA and DCITA. Industry is also involved and contributes to Australia's delegations to high-level ITU-T meetings, including the World Telecommunication Standardization Assembly (WTSA) and the Telecommunication Standardization Advisory Group (TSAG).

Australian industry makes an important contribution to international telecommunications standards setting, which assists Australia to fulfil its obligations under the World Trade Organisation (WTO) Standards Code requirements. The WTO requirements have wide currency among Australia's major trading partners. They aim to ensure that technical regulations, standards and testing and certification systems do not create unnecessary obstacles to international trade.

### Industry involvement and participation in international standardisation

The benefits of industry involvement in international standardisation activity include:

- promoting the local industry's international competitiveness;
- developing technical capability and skills in the industry; and
- ensuring user requirements are built in and accounted for in international standards for products and services.

Through Telstra and its predecessors, Australia's communications industry has built an impressive reputation within ITU-T. Australia's reputation has relied on the technical expertise of its delegates, and its ability to act as an honest broker in international discussions.

A combination of changes in commercial priorities of Australian companies (including Telstra), the geographic isolation faced by Australian companies and the consequences of the downturn in the global telecommunications industry has led to a significant reduction in Australian involvement in ITU-T activities. In the long term, the effect of diminished industry involvement in the development of international standards can hinder or limit Australian industry's ability to trade in the global market.

Involvement in standards activity encourages growth in the export of Australian products and services, and ensures Australian-specific requirements (for example, emergency service capabilities) are built in during the development of products and services. Standards are also the key to enhancing our global competitiveness, attracting investment and encouraging and supporting innovation.

Notwithstanding the decrease in Australian industry participation, Australia retains a credible presence in ITU-T activities.

In the 1980s and 1990s, there was a shift in the focus of standardisation activity away from the ITU-T to other industry-based standardisation organisations, including the ATM Forum, the VDSL Forum and the Internet Engineering Task Force. There has been a reversal in this shift in recent times. This reflects industry's limited resources to participate in standardisation activity and recognises that the ITU-T is seen as the most important and visible global standardisation brand, despite that fact that the ITU-T does not necessarily develop technical standards 'from the ground up'.

7

### World Telecommunication Standardization Assembly

The ITU-T commenced the 2005–08 study period following the conclusion of the WTSA, held from 5–14 October 2004 (WTSA-04). WTSA is the highest level meeting of the ITU-T and determines the sector's standardisation priorities for the forthcoming study period. The ACA led the Australian delegation to WTSA-04, which included industry representatives.

Australian input to WTSA is developed through a national coordination process involving industry and government representatives. This process parallels a similar process for the development of Australian technical input to ITU Study Groups.

The outcomes of WTSA-04 will be of benefit to Australian industry. Australia's involvement focused on the organisation of the ITU-T, its working methods and work program, and telecommunications services and tariff issues.

Australia was a signatory to 10 separate proposals, of which nine were jointly developed with and supported by countries of the Asia–Pacific Telecommunity (APT). All Australian proposals were accepted either in principle or as proposed. Australia was further associated with a series of 13 common objectives sponsored and coordinated by the Commonwealth Telecommunications Organisation.

The major outcomes of WTSA-04 that are relevant to Australia include:

- increasing the minimum number of objecting Member States (from one to two) required before an ITU-T Recommendation can be vetoed;
- establishment of the Next Generation Networks (NGN) Study Group;
- new resolutions on internet governance, spam and cybersecurity;
- measures to increase the transparency of ITU-T work and encourage wider participation in ITU-T activities; and
- strengthening the role of TSAG to enable improved coordination of ITU-T activity, particularly for high profile standardisation topics such as NGN and security.

The benefits of Australia's success at WTSA-04 are best described in the longer rather than the shorter term. For example, the establishment of the NGN Study Group focuses NGN standardisation activity in the ITU on the important technological advances being studied by various international organisations and ensures the ITU remains a credible, pre-eminent, global standards body developing relevant standards in a fast-paced telecommunications industry. Similar benefits are also identifiable with the adoption of WTSA resolutions on topical matters, such as spam, which are currently the focus of many organisations and administrations around the world.

A significant issue at WTSA-04 was restructuring of ITU-T Study Groups. Apart from establishing the NGN Study Group, there was only minimal change to the current study group structure. The NGN Study Group (formerly Study Group 13, but with increased responsibilities) will provide a focal point for the ITU-T's NGN activities. It works closely with Study Group 11 on signalling and protocol aspects of NGN, and Study Group 19 on fixed-to-mobile convergence issues. This structure also provides a focal point for Australian industry involvement and input to international NGN standardisation activities.

## 7

The most significant outcome for Australia was the change to the approval process for ITU-T technical recommendations. After considerable debate, the WTSA agreed to increase the number of Member States required to veto a recommendation from one to two. This has been a highly controversial issue for the ITU-T for many years. The symbolism of this change is significant because it demonstrates that the ITU-T is capable of adapting its working methods to suit the contemporary telecommunications environment.

Australia's only candidate for an office bearer position within ITU-T, Mr Leslie Graf of Ericsson Australia, was elected for the 2005–08 study period as Vice-Chairman of Study Group 11 (Signalling Requirements & Protocols).

### The Asia–Pacific Telecommunity Standardization Program

The ninth Asia–Pacific Telecommunity Standardization Program (ASTAP) Forum was held from 29 March to 1 April 2005. ASTAP promotes regional harmonisation in telecommunications standardisation by encouraging countries to exchange information on standardisation issues, and to develop common regional strategies on emerging standardisation issue, including NGN and security.

The meeting was attended by around 100 participants representing industry and government from Asia–Pacific countries and international organisations. Recognising the substantial amount of work which has already been undertaken globally on NGN standardisation, ASTAP discussed the role it could play in developing regional input into international NGN standardisation activities. ASTAP also discussed how to implement the new APT documentation scheme to assist in the development of regional input.

In its continuing support and recognition of the value of ASTAP as an important mechanism for information exchange on standardisation issues common to countries in the Asia–Pacific region, ACMA will host the 10th ASTAP Forum in Melbourne from 24 to 27 October 2005. Workshops on voice over internet protocol and NGN will follow the forum on 28 October. A workshop on accessibility and usability issues will also be held as part of the ASTAP meeting. Hosting the meeting in Australia will enable greater participation by Australian industry.

Reflecting the ACA's standing and influence in the Asia–Pacific region, an ACA officer was seconded to the APT in Bangkok, Thailand, in April 2005 for 12 months to assist in strengthening Australia's ties in the Asia–Pacific region through enhanced collaboration to develop better telecommunications standards.

### ITU-T Study Groups

ITU-T Study Groups are responsible for developing recommendations (voluntary standards) about telecommunications standardisation matters.

In general, Australian technical input into ITU-T Study Groups is developed by Australian industry by means of National Study Groups (NSGs) administered by ACMA. NSGs mirror ITU-T Study Groups work programs, and are made up of representatives of Australian industry with an interest in the relevant ITU-T Study Group work program. Representatives of industry, government and other interested parties develop draft Australian input to relevant ITU-T Study Groups. These groups meet at appropriate times to progress standards development and to consider input to the ITU-T Study Groups.

Responsibility for Australia's participation in the ITU-T Study Groups is currently divided between Australian industry representatives, ACMA and DCITA. ACMA represents Australia's interests in Study Group 2 (Numbering and Related Matters), while DCITA represents Australia's interests in Study Group 3 (Tariff and Accounting Principles, including related telecommunications economic and policy issues). Australian industry representatives participate in other Study Groups on behalf of Australia, including Study Group 5 (Protection against Electromagnetic Environment Effects), Study Group 9 (Integrated Broadband Cable Networks and Television and Sound Transmission) and Study Group 17 (Security).

The focus of Australian industry participation is on the NGN-related Study Groups. The fundamental difference between NGN and today's network is the switch from current 'circuit-switched' networks to 'packet-based' systems such as those using internet protocol (IP). The need for global standards is critical as most operators expect to move to an IP infrastructure. One area being studied is the concept dubbed 'nomadicity', which will provide seamless communication for fixed line and mobile users—the underlying technology will be invisible to the user regardless of a multi-service, multi-protocol, multi-vendor environment.

Ericsson Australia remains Australia's most active participant through attendance at NGN-related ITU-T Study Groups—Study Groups 13, 11 and 19. Other industry participants include representatives of Telstra and Appropriate IT & Communications. An important issue for industry in ITU-T NGN discussions has been the identification of the protocol for international NGN standards. European manufacturers, many of whom have a local presence in Australia, support the use of the IP Multimedia Subsystem (IMS) as the basis for international NGN standards. IMS is the basis of the standards for all IP GSM-based 3G mobile systems.

The choice of NGN protocol has significant implications for manufacturers' investment decisions and international trade in telecommunications equipment. For these reasons, manufacturers are actively involved in ITU-T NGN discussions.

Carriers—including Australian carriers—have significantly scaled back their involvement in international standardisation activities generally, reflecting a global trend towards 'off the shelf' equipment purchases by carriers. Therefore, ACMA and other regulatory agencies' relationships with manufacturers is becoming an increasingly important issue in developing international standards.

#### *ITU-T rapporteurs meeting on Next Generation Networks*

Australia (through the ACA) and Ericsson co-hosted an ITU-T NGN Rapporteurs meeting in March 2005. The Rapporteurs meeting discussed technical issues relating to fixed-to-mobile convergence and included representatives from Europe, North America and Asia.

One particular issue discussed at the meeting was the use of subscriber identity module (SIM) functionality in fixed-to-mobile converged NGNs. Although no final decisions were made, the meeting accepted that a range of regulatory issues are raised by the use of SIMs, including emergency call access arrangements, user authentication and security, and user location (including call tracing).

#### *Mutual recognition arrangements*

Australia is a party to a number of bilateral and multilateral mutual recognition arrangements (MRAs). MRAs promote a harmonised approach to standards making and conformity assessment, facilitating free trade between signatories. MRAs provide benefits to industry by reducing operational costs such as for equipment testing.

ACMA works closely with the National Association of Testing Authorities (NATA) in managing Australia's interests under MRAs. In particular, NATA advises ACMA on applications by overseas test houses for accreditation under MRAs.

NATA participated in the Australian delegation to the Asia–Pacific Economic Cooperation Telecommunications and Information Working Group (APEC-Tel) meetings held in September 2004 and April 2005. NATA has taken an active role in the APEC-Tel MRA Task Force, which is overseeing APEC-Tel discussions on the operation and possible improvements to the APEC-Tel MRA.

7

### **Consumer involvement in regional and international standards making**

Industry participated in discussions between the ACA and the Consumers' Telecommunications Network (CTN) to improve awareness of consumer and user issues in the development of international standards. This work focused on the ITU-T and the Global Standards Collaboration (GSC) process. The GSC is a regular meeting of national and international standardisation bodies, but did not meet during the 2004–05 reporting period.

As part of this work, the *Guide for ITU-T Study Groups – Considering End-user Needs in developing Recommendations*, was developed (instigated by Australia) and implemented on a trial basis in March 2005 for use by ITU-T Study Groups. This activity has been well supported by industry.

The Australian User Standards Telecommunication Advisory Group (AUSTAG) promotes greater user involvement in standardisation activities at national, regional and international levels. AUSTAG also participated in and contributed to the development of the guide for ITU-T Study Groups and includes representatives from the Australian Communication Exchange, ACIF, the Australian Telecommunications Users Group, CTN, carriers, manufacturers, Standards Australia and the Telecommunications and Disability Consumer Representation.

# chapter 8

## CHAPTER 8: OPERATION OF THE CUSTOMER SERVICE GUARANTEE SCHEME, THE UNIVERSAL SERVICE REGIME AND THE NETWORK RELIABILITY FRAMEWORK

Key developments	145
Customer Service Guarantee	146
<i>CSG – service providers' performance</i>	146
Mass service disruptions	148
Priority assistance	148
<i>Priority assistance – service provider performance</i>	149
Network Reliability Framework	149
<i>Level 1 – National and field service area performance</i>	149
<i>Level 2 – Exchange service area performance</i>	150
<i>Level 3 – Individual service performance</i>	151
<i>Network Reliability Framework review</i>	151
Universal service obligation	152
<i>Interim and alternative services</i>	152
<i>Payphones</i>	153
Digital data service obligation	154
<i>General digital data service obligation</i>	155
<i>Special digital data service obligation</i>	156
USO funding	158
<i>Levy credit claims for 2003–04</i>	158
<i>Levy credit claims 2004–05</i>	158

8



## CHAPTER 8: OPERATION OF THE CUSTOMER SERVICE GUARANTEE SCHEME, THE UNIVERSAL SERVICE REGIME AND THE NETWORK RELIABILITY FRAMEWORK

This chapter discusses the performance of major service providers in the provision and maintenance of the standard telephone service (STS) for residential and small business customers. It also reviews the performance of Telstra under the universal service obligation (USO) and Network Reliability Framework (NRF).

More detailed analysis of service provider performance in 2004–05 against the Customer Service Guarantee (CSG) Standard and Telstra's performance under the NRF can be found in the June 2005 edition of ACMA's *Telecommunications Performance Monitoring Bulletin*.

### KEY DEVELOPMENTS

- Telstra's overall service connection performance in 2004–05 improved slightly to 96 per cent of connections completed within CSG timeframes. The number of Telstra CSG-eligible connections declined from 1.89 million to 1.72 million. Optus, AAPT, Primus and TransACT combined had around 200,000 CSG-eligible connections, with service connection performance ranging from 97 to 100 per cent.
- Telstra repaired a total of 828,858 CSG-eligible faults during 2004–05, two per cent more than last year, with the increase wholly the result of increased faults in urban areas. Despite the increased number of faults, the proportion of faults repaired within CSG timeframes improved slightly. Optus, AAPT, Primus and TransACT combined had 310,585 CSG-eligible faults, with the proportion of faults repaired within CSG timeframes ranging from 98 to 99 per cent.
- On average, for each month of 2004–05, an average of 99.06 per cent of CSG services on the Telstra network did not have a fault, compared with 99.11 per cent in 2003–04. Based on this data for the period since January 2003, ACMA estimates that 90 per cent of eligible services do not have a fault in a year.
- The percentage of service availability in 2004–05 was 99.94 per cent and, for services that experienced a fault, the monthly average time that a service was unavailable was 51 hours. These performance results are unchanged from 2003–04.
- The ACA conducted a review of the NRF and a final report was given to the Minister in June 2005. The ACA recommended Level 2 reporting and remediation being extended to cable runs to provide a more direct and precise targeting of remediation to poorly performing parts of the network.

## CUSTOMER SERVICE GUARANTEE

The CSG Standard seeks to encourage the timely provision and maintenance of the STS for residential customers and small business customers with five or less telephone lines.

The CSG specifies timeframes within which service providers must connect telephone services, repair faults and arrive for any associated appointments. These timeframes vary depending on the type of request—whether it is for a service connection or repair—and the location of the service—whether the site is in an urban, rural or remote area. If a service provider fails to meet a CSG timeframe, it is required to make an automatic compensation payment to the affected customer. The connection and fault repair timeframes for telephone services, together with the associated compensation payments for any failure to meet those timeframes, are shown in Table 8.1.

Table 8.1: CSG timeframes for connections and fault repairs and potential compensation liabilities

Region	Definition of region	CSG timeframe (in working days)				Compensation payable per working day that connection is late		
		In place activation	New service connection		Fault repair	Days 1–5		Day 6 onwards
			Close to infrastructure	Not close to infrastructure		Residential customers & charities	Business customer	
Urban	More than 10,000 people	2	5	20	1	\$12	\$20	\$40
Major rural	Between 2,501–9,999 people	2	10	20	2			
Minor rural	Between 201–2,500 people	2	15	20				
Remote	Up to 200 people	2	15	20	3			

## 8

### CSG – service provider performance

Telstra's overall number of CSG-eligible connections declined from 1.89 million to 1.72 million during 2004–05, of which 96 per cent (or 1.66 million) were completed within the required timeframes. Only 0.19 per cent of all connections were categorised as extreme cases of failure (that is, completed more than five days later than the required timeframe). Telstra completed 90 per cent or more of connections in the urban and rural areas of all states and territories within the required timeframes during each quarter of 2004–05. In remote areas, Telstra completed 92 per cent of connections (aggregated nationally) within the required timeframe during the year. As a result of missing CSG connection timeframes, Telstra made 65,293 compensation payments, totalling \$3.79 million during 2004–05.

Telstra repaired a total of 828,858 CSG-eligible faults during 2004–05, two per cent more than last year. This increase was wholly the result of a four per cent rise (from 536,179 to 560,147) in the number of faults in urban areas. The number of faults in rural and remote areas fell by three per cent (from 272,302 to 263,769) and 11 per cent (from 5,545 to 4,942) respectively.

Despite the overall increase in fault volume, the proportion of faults repaired within the required timeframes increased from 91 per cent in 2003–04 to 92 per cent in 2004–05. Telstra repaired 90 per cent or more of faults in the urban and rural areas of all states and territories within the required timeframes during each quarter of 2004–05. In remote areas, Telstra completed 92 per cent of fault repairs (aggregated nationally) within the required timeframe during the year. Only 0.63 per cent of all fault repairs were categorised as extreme cases of failure. As a result of missing CSG fault repair timeframes during 2004–05, Telstra made 74,063 compensation payments, totalling \$1.82 million.

Telstra made 578,862 appointments during 2004–05 for connection or repair of faults on CSG-eligible services, a decrease of one per cent (or 4,577) compared with the previous year. Telstra arrived on time at 93 per cent (or 539,043) of its appointments during 2004–05, an improvement of two percentage points compared with the previous year. As a result of missing appointments, Telstra made 34,787 compensation payments, totaling \$491,338, an average of \$14.12 per compensation payment.

Optus completed 99 per cent of its 94,679 CSG-eligible direct connections within the required timeframe, all of which were in urban areas. Only 0.07 per cent of all connections were categorised as extreme cases of failure. During each quarter of 2004–05, Optus completed 98 per cent or more of connections within the required timeframe in the three states in which it directly connects customers to its network. As a result of missing CSG connection timeframes, Optus made 668 compensation payments totalling \$27,856, during 2004–05.

There were 154,415 CSG-eligible faults that affected Optus customers during 2004–05, three per cent (or 3,998) less than last year. Ninety-eight per cent of all faults were repaired within the required timeframe, with only 0.095 per cent constituting an extreme case of failure. With the exception of rural New South Wales in the June 2005 quarter, 90 per cent or more of all CSG-eligible faults affecting Optus customers were repaired within the required timeframes in the urban and rural areas of all states and territories during each quarter of 2004–05. As a result of missing CSG fault repair timeframes, Optus made 3,424 compensation payments, totalling \$111,612, during 2004–05.

As a result of not complying with CSG appointment timeframes, Optus made 1,345 compensation payments totalling \$16,140 in 2004–05, an average of \$12 per compensation payment.

AAPT had 83,930 CSG-eligible connections during 2004–05, of which 97 per cent were completed within the required timeframe. Ninety-eight per cent of the 86,075 CSG-eligible faults affecting AAPT customers were repaired within the required timeframe. AAPT made 1,290 compensation payments, totalling \$35,892, as a result of late connections and 2,032 compensations payments, totalling \$80,320, for late fault repairs. As a result of missing appointments in relation to fault repair, AAPT made 840 compensation payments, totalling \$11,976, an average of \$14.26 per compensation payment.

Primus Telecom had 20,802 CSG-eligible connections during the year, of which 99 per cent were completed within the required timeframe. Ninety-eight per cent of the 63,963 CSG-eligible faults that affected Primus customers during 2004–05 were repaired within the required timeframe. In 2004–05, Primus made 616 compensation payments, totalling \$81,950, as a result of late connections and 1,506 compensation payments, totalling \$81,914, as a result of late fault repairs. For not adhering to CSG appointment timeframes, Primus made 44 compensation payments, totalling \$528, an average of \$12 per compensation payment.

TransACT Communications completed all 589 CSG-eligible connections to its network within the required timeframe during 2004–05. Ninety-nine per cent of the 6,132 CSG-eligible fault repairs were completed within the required timeframe. TransACT made 6,132 appointments during 2004–05 for connection or repair of faults on CSG-eligible services. TransACT arrived at 96 per cent (or 5,866) of its appointments within CSG timeframes. As a result of missing appointments for fault repair, TransACT made two compensation payments.

## MASS SERVICE DISRUPTIONS

Under the CSG Standard, a service provider can claim an exemption from the CSG and extend the timeframes by declaring a mass service disruption (MSD) if its ability to connect or repair services within those timeframes is affected by circumstances beyond its control. Such circumstances may include damage to infrastructure caused by a third party, natural disasters or extreme weather conditions, or the need to comply with a law of the Commonwealth, a state or territory.

During 2004–05, Telstra declared 106 MSDs due to extreme weather conditions or natural disasters, a decrease of 15 per cent (or 18) compared with 2003–04, but 63 per cent (or 41) more than in 2002–03. Each MSD in 2004–05 potentially affected an average of 649 services and applied for an average of five working days.

Optus declared 11 MSDs during 2004–05, 57 per cent (or four) more than last year. Each Optus MSD in 2004–05 potentially affected an average of 2,750 services and applied for an average duration of six working days.

No other service provider declared an MSD during the year.

Table 8.2 shows how the MSD figures for 2004–05 for Telstra and Optus compare with previous years.

Table 8.2: Mass service disruptions declared by service providers, 2000–01 to 2004–05

Year	Telstra			Optus		
	Number of MSDs	Average number of services affected by each MSD	Average duration of each MSD (in working days)	Number of MSDs	Average number of services affected by each MSD	Average duration of each MSD (in working days)
2000–01	17	2,190	14	5	14,020	16
2001–02	43	1,145	7	21	6,485	9
2002–03	65	469	6	6	275	8
2003–04	124	566	6	7	6,557	10
2004–05	106	649	5	11	2,750	6

8

## PRIORITY ASSISTANCE

Priority assistance is an enhanced telephone connection and repair service for people with a diagnosed life-threatening medical condition who are at risk of suffering a rapid, life-threatening deterioration in their condition. Priority assistance customers are entitled to faster connection and fault repair of their fixed line telephone service.

Telstra offers priority assistance services to its customers as a condition of its carrier licence and is required to provide service connection and fault repair for its priority customers within 24 hours (in urban and rural areas) and 48 hours (in remote areas). In addition, Telstra is obliged to provide its priority assistance customers with enhanced service reliability if they experience two or more faults within a three-month period. Telstra will test the service to identify the underlying network causes and if necessary ensure that the cause is fixed to a high level of service reliability as soon as possible.

Currently, AAPT and Primus are the only other major service providers who voluntarily offer priority assistance services in line with the requirements of the Australian Communications Industry Forum (ACIF) *Industry Code ACIF C609:2003 Priority Assistance for Life Threatening Medical Conditions*. Optus offers a similar service called Optus Special Assistance Service, which only provides prioritised fault resolution where possible.

### Priority assistance – service providers' performance

While the number of Telstra priority assistance customers has fluctuated since June 2003, the 2004–05 customer base of 148,602 represents a 40 per cent increase since 30 June 2004.

Priority assistance connection performance at the national level was relatively stable for the period June 2003 to June 2005, with 95 per cent of connections meeting the required timeframes. Of those connections that were not completed within the required timeframes, the majority were connected in less than two days. The average number of connections requested per quarter in 2004–05 was approximately 7,102.

During 2004–05, there were 104,993 faults reported nationally; an average of 26,248 faults per quarter. On average, 95 per cent of these faults were repaired within the required timeframes. Of those fault repairs missing the timeframes, the majority only missed the timeframe by one day or less.

AAPT reported that it had 1,124 priority assistance customers at 30 June 2005. During the June 2005 quarter, of the 52 connections requested, 66 per cent in urban areas and 78 per cent in rural areas respectively met the 24/48 hour timeframes under the priority assistance code.

In the June 2005 quarter, AAPT reported 695 faults. In urban areas, 88 per cent of faults were fixed within the 24/48 hour timeframes, while in rural areas the figure was 85 per cent. However, the timeframes do not apply to those customers who may have received an interim service.

Primus reported that it had 2,364 priority assistance customers at 30 June 2005. During the June 2005 quarter, there were 243 connections, of which 82 per cent in urban areas and 75 per cent in rural areas met the required timeframes under the priority assistance code. In the June 2005 quarter, Primus reported a total of 498 faults, but did not provide data for fault repairs meeting the performance timeframes.

## NETWORK RELIABILITY FRAMEWORK

The NRF is a three-tiered regulatory arrangement under which ACMA monitors the reliability of Telstra's fixed telephone services. It commenced in January 2003 as part of Telstra's licence conditions. The NRF captures the performance of Telstra's CSG-eligible customers: household and small business fixed line customers with five lines or less.

The NRF monitors performance at three different levels of disaggregation:

- Level 1: nationally and Telstra's field service areas (FSAs);
- Level 2: exchange service areas (ESAs); and
- Level 3: individual services.

Level 1 is to inform the public broadly about network reliability performance. Under Levels 2 and 3, Telstra can be required to remediate poorly performing parts of its network to improve performance.

### Level 1 – National and field service area performance

Under the NRF Level 1 arrangement, Telstra is required to report on performance nationally and for each FSA in Australia. The 44 FSAs include regions such as Perth South, the NT Top End, and the NSW Central Coast.

Level 1(a) looks at the percentage of services that did not have a fault in the month. For each month in 2004–05, an average of 99.06 per cent of services in Australia did not have a fault, compared with 99.11 per cent in 2003–04. Based on Level 1(a) data for the period since January 2003, ACMA estimates that 90 per cent of eligible services do not have a fault in a year.

Level 1(b) is concerned with the percentage of time in a month that services on average are available. A service is considered available if it is not awaiting repair. The performance is calculated based on the total sum of time associated with fault repairs and then averaged across all services, whether or not they had a fault in the month. For each month in 2004–05, services in Australia were available for an average of 99.94 per cent of the time. This is equivalent to services being unavailable for approximately five hours in a year. Performance on a national basis was unchanged from 2003–04.

Level 1(c) is an additional measure calculated by ACMA. It is concerned with the average time that fault-affected services were unavailable in the month. Unlike Level 1(b), this measure only considers services that had one or more faults in the month. For each month in 2004–05, services that had one or more faults in the month were unavailable for an average of 51 hours in that month. National performance was unchanged from 2003–04.

The FSAs with the best performance against the various Level 1 measures have generally been the central business districts of capital cities, followed by metropolitan areas generally, and then the less densely populated rural and remote areas. Rainfall, and to a lesser extent lightning, are also important factors affecting performance.

## Level 2 – Exchange service area performance

Telstra is required to report to ACMA each month on ESAs that breach certain fault thresholds. An ESA refers to an area served by a Telstra telephone exchange and there are 5,058 ESAs in Telstra’s network. The fault thresholds vary according to the size of the ESA, as shown in Table 8.3.

Table 8.3: Level 2 fault thresholds

Where the ESA has ...	Telstra must report the ESA if ...
1 to 100 services	Two or more services have at least one fault in each of the two preceding months
101 to 1,000 services	Three or more services have at least one fault in each of the two preceding months
1,001 to 10,000 services	Four or more services have at least one fault in each of the two preceding months
10,001 or more services	Five or more services have at least one fault in each of the two preceding months

The reporting of an ESA under Level 2 is not necessarily an indication of poor performance or that an ESA is in need of remediation work. Faults caused by circumstances beyond the control of Telstra, such as floods, fires and cable cuts, contribute to the number of faults recorded in an ESA.

ACMA requests additional information from Telstra about the underlying causes of the service difficulties for selected ESAs, generally those that have breached the thresholds on a number of occasions and have a high percentage of services experiencing faults in two consecutive months. This information is used to identify whether there are common causes for the faults reported and if so, whether remediation is required. Where appropriate, ACMA may use its powers to request remediation plans from Telstra to improve performance, or seek a justification as to why remediation is not appropriate.

ESAs breached the Level 2 thresholds on 2,683 occasions in 2004–05, compared with 2,233 breaches in 2003–04. Many ESAs have been reported on more than one occasion, with 763 different ESAs, or 15 per cent of all ESAs, accounting for the breaches in 2004–05.

Reporting under Level 2 of the NRF has not successfully identified ESAs with systemic poor performance that require remediation. Additional information was only requested about the nature of the faults in 96 ESAs that had breached the thresholds. Remediation of poorly performing parts of an ESA (over and above the minimum work necessary to repair the faults) was considered appropriate and carried out in 38 of these ESAs.

Concerns about the effectiveness of Level 2 outcomes led to the former ACA recommending significant changes as part of its review of the NRF in 2004–05, which is discussed in the NRF review section.

### Level 3 – Individual service performance

Telstra is required to take action to prevent an individual service from experiencing:

- four or more faults in a rolling 60-day period; or
- five or more faults in a rolling 365-day period.

Telstra is required to report to ACMA any services that breach these thresholds. ACMA examines the adequacy and appropriateness of Telstra's actions for improving performance and, where necessary, requests Telstra to further remediate the services reported.

Overall, few services in Australia breach the Level 3 thresholds. Telstra reported 355 services to ACMA in 2004–05 for breaching the 60-day threshold. This is 40 per cent more than the 253 services reported in 2003–04, but represents only 0.005 per cent of Telstra's CSG-eligible services in Australia.

Breaches of the 365-day threshold are relatively more common. Telstra reported 1,836 services to ACMA in 2004–05 for having five or more faults in a 365-day period. It is not appropriate to compare annual performance for 2004–05 with results for 2003–04, because figures were not available for the full year (the NRF was introduced in January 2003). The number of 365-day breaches in 2004–05 represents 0.026 per cent of Telstra's CSG-eligible services in Australia.

More detailed analysis of Telstra's performance against the NRF is in the June 2005 edition of ACMA's *Telecommunications Performance Monitoring Bulletin*.

### Network Reliability Framework review

The ACA conducted a review of the NRF and reported on its findings to the Minister in November 2004. After further consideration of some of the issues in conjunction with DCITA, a revised report was given to the Minister in June 2005. This report is published on the ACMA website.

The ACA found that the NRF has generally achieved its objectives, although consumers have enjoyed only limited benefits from action taken as a result of reporting under Level 2. Some of the recommendations in relation to Level 2 included:

- the level of disaggregation should be increased so that cable runs, rather than ESAs, are the focus of Level 2 performance monitoring and remediation; and
- Telstra should be required to remediate 480 of the worst performing cable runs each year.



## UNIVERSAL SERVICE OBLIGATION

The USO ensures that all people in Australia, wherever they reside or carry on business, have reasonable access to the STS. The *Telecommunications (Consumer Protection and Service Standards) Act 1999* defines an STS as a carriage service providing voice telephony, or an equivalent service that meets the requirements of that Act and the *Disability Discrimination Act 1992*. The STS also includes provision of an appropriate handset or other customer equipment that enables a person with a disability to communicate over a telecommunications network.

As the universal service provider, Telstra is required to supply the STS and it may only refuse or delay supply in exceptional circumstances.

### Interim and alternative services

Under section 2.6 of Telstra's USO Standard Marketing Plan (SMP), Telstra is required to offer customers access to an interim or alternative service when there is an extended delay in connecting or repairing a customer's STS. Other service providers are not required to offer interim and alternative services for extended delays in connecting a service or repairing a fault, although they may choose to do so to limit the compensation payable to customers under the CSG Standard.

An interim service is a voice telephony service that uses mainly mobile or satellite technology and is charged at STS rates. Customers provided with an interim service are able to make and receive local calls at an untimed local call fee rather than at rates associated with mobile or satellite telephone services. The core features of an interim service are similar to those provided by Telstra's STS; although additional features such as enhanced call handling, data or facsimile capabilities may not be available with an interim service. An interim service can be supplied to a customer for a period that does not exceed six months or for a longer period with the agreement of the customer.

An alternative service can be supplied in various ways, such as through call diversion to a mobile service or another fixed line telephone service. Telstra is not obliged to charge STS rates for these services. If a customer accepts an offer of an alternative service, they may request an interim service in place of the alternative service at any time.

Where a customer is offered the choice between an interim and alternative service, Telstra is required to provide the customer with information about the features, functionality and terms and conditions of each service to enable the customer to make a decision based on the merits of the service. Telstra must offer an interim service or may elect to offer the customer a choice between an interim or alternative service when:

- a service cannot be connected within 30 working days; or
- a fault on a service cannot be fixed within five working days; or
- a telephone service has been inoperative on three or more occasions for a total period of 14 days or more within the previous 12 months; or
- an interim or alternative service has been provided for recurrent faults (as referenced above) and the service becomes inoperative again at any time within the 12 months following service restoration.

Telstra is also required to offer priority customers an interim or alternative service where it cannot connect or repair a telephone service within the timeframes specified in its Priority Assistance for Individuals Policy. This policy is an appendix to Telstra's SMP.

Telstra is exempt from the requirement to provide an interim or alternative service where there are circumstances beyond its control, such as in the case of damage to a service provider's facilities, a natural disaster or extreme weather conditions. In such cases, Telstra may declare a mass service disruption.



*Supply of interim and alternative services*

During 2004–05, Telstra supplied 3,874 interim services and 211 alternative services to customers who experienced a significant delay in connection. On average, each interim/alternative service was in place for 43 working days. Of the total number of interim and alternative services supplied, 95 per cent were supplied within 30 working days. Telstra provided data for 2003–04, but not for the full year, which limits the comparisons that can be made with data for 2004–05.

*Interim and alternative service audit – Telstra*

The ACA commissioned an independent audit report by Acumen Alliance on Telstra’s compliance with its interim and alternative service requirements under the USO. The report was provided to the ACA in October 2004. The audit investigated Telstra’s systems and procedures for offering interim and alternative services, and, in particular, its data collection and record-keeping procedures as well as an assessment of its compliance with the SMP. Complaints received by Telstra about interim and alternative services were also examined.

The report found that Telstra was complying with its regulatory obligations, although improvements were needed in its reporting arrangements, particularly for alternative services. It concluded that limitations in Telstra’s legacy IT management systems were restricting reporting, but with improvements to Telstra’s management of services, such as the introduction of the FuturEDGE system, these issues were being addressed. The report recommended that Telstra provide comprehensive reporting about the supply of interim and alternative services, consistent with its regulatory requirements. It also recommended that Telstra should advise ACMA about its strategies to address complaints associated with diversion charges for alternative services. Data provided during the audit indicated that these complaints were relatively high (see below).

*Interim and alternative service complaints*

There were few complaints to the TIO about interim and alternative services, as shown in Table 8.4.

Table 8.4: TIO complaint issues for interim and alternative services, 2003–04 to 2004–05

Type of complaint	2002–03	2003–04	2004–05
Inadequate/incorrect advice regarding interim/alternative service	2	1	7
Delay in fault repair for interim/alternative service	17	3	0
Delay in provision of service for interim/alternative service	3	7	9

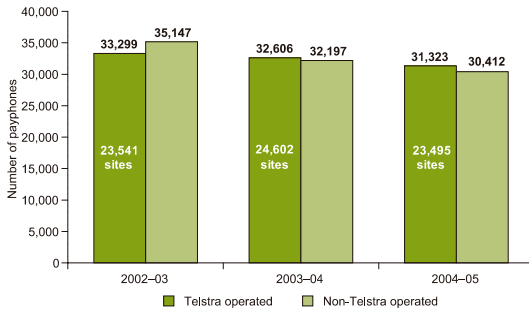
8

While Telstra is not required to report complaints about its interim and alternative services to ACMA, information about its interim and alternative service complaints was received during the ACA’s 2004 audit of these services. The majority of these complaints concerned charges for alternative services, with customers complaining about the higher mobile timed call rates they incurred when their fixed service was diverted to a mobile service. Other complaints related to quality of service and arrangements for the supply or recovery of the interim service.

**Payphones**

The provision of payphone services in Australia, while open to competition, is supplemented by the USO to ensure that payphones are reasonably accessible to all people in Australia regardless of where they reside or carry on business. As the sole universal service provider, Telstra’s provision of payphone services is monitored by ACMA. It also receives information about the number of payphones operated by private operators.

Figure 8.1: Payphones in operation, 2002–03 to 2004–05



During 2004–05, the total number of payphones in operation in Australia decreased by five per cent to 61,735. Telstra operates a little more than half (31,323 or 51 per cent) of all payphones, either on a competitive basis or in commercially unprofitable areas under the USO. The remaining 49 per cent are operated by payphone operators such as TriTel and Optus, or by independent entities, such as hotels, clubs and convenience stores, using payphone access lines supplied by Telstra. Since 2002–03, the number of payphones in operation by providers other than Telstra fell by 4,735, or 13.5 per cent. As Telstra often operates more than one payphone at a particular site, the number of Telstra payphone sites (see Figure 8.1) provides a more accurate indication of the

accessibility of Telstra payphones than payphone numbers alone.

Approximately 226 million calls were made on Telstra’s payphones during 2004–05, eight per cent fewer than in the previous year. The general decline in payphone use and numbers is attributed to the increased penetration of mobile phones.

Telstra’s performance against prescribed timeframes for installation of new payphones improved in 2004–05, especially in minor rural areas (94 per cent on time) and remote areas (100 per cent on time).

On average, each Telstra payphone was unserviceable for about seven per cent of the time during 2004–05, which is consistent with the results for the previous year. ACMA will continue to monitor Telstra’s performance in fault repair timeframes. Not all faults render a payphone unworkable or unserviceable; the fault data includes so-called ‘non-critical’ faults, such as a flickering light inside a payphone booth.

Results for fault repair in urban areas improved for the June 2005 quarter (90 per cent repaired on time) compared with the June 2004 quarter (85 per cent on time). Fault repair performance in rural areas was comparable with that for the previous year. However, there are ongoing concerns for remote areas, where 82 per cent of faults were repaired within the required timeframe of three business days, but five per cent of faults took six or more business days to repair during the 2004–05 year.

8

More information about payphones in Australia is provided in the June edition of ACMA’s *Telecommunications Performance Monitoring Bulletin*. The information includes analysis of payphone availability by state and detailed analysis of fault repair performance by quarter for urban, rural and remote areas.

## DIGITAL DATA SERVICE OBLIGATION

The digital data service obligation (DDSO) was introduced by the Australian Government in 1999 to ensure that all people in Australia have access to a digital data service with a 64 kilobits per second (kbit/s) transmission capability. The DDSO is made up of two separate obligations—the general digital data service (GDDS) obligation and special digital data service (SDDS) obligation.

The GDDS provides access to a carriage service that has a digital data capability broadly comparable to that of a 64 kbit/s channel of an integrated services digital network (ISDN) service. An ISDN service is a digital telecommunications access line that provides the digital equivalent of two telephone lines, each with a guaranteed data capability of 64 kbit/s and an ancillary 16 kbit/s data signalling channel.

The SDDS also delivers a 64 kbit/s digital data capability to a customer. The main difference between the GDDS and SDDS is that the SDDS may be provided asymmetrically, with the path outbound from the customer providing a lower data rate than the inbound path. The SDDS is intended for customers unable to receive the GDDS due to technical reasons and is usually supplied via satellite.

### General digital data service obligation

As the sole GDDS provider, Telstra must supply services on request in GDDS areas. These areas, defined in the *Digital Data Service Areas Determination 1999 (No. 1)* are metropolitan areas within a radius of four kilometres from an ISDN-capable telephone exchange, or rural and remote areas within a radius of six kilometres from such an exchange. An exception to this is if a customer connection uses subscriber line conditioning equipment or a pair gain system, in which case the connection is considered to be in an SDDS area. A service area that does not qualify for GDDS is, by default, considered to be an SDDS area.

#### *Fulfilment of GDDS obligation*

Telstra's *Digital Data Service Plan for general digital data service areas* (GDDS plan) sets out how Telstra fulfils its GDDS obligation and specifies certain performance standards, such as repair and connection timeframes and average access availability.

Table 8.5 shows Telstra's performance in connecting basic rate ISDN services against timeframes in its GDDS plan. In-place connection performance remained high at 97 per cent in 2004–05. New service connections in urban areas recovered slightly to 90 per cent from the previous fall in performance, but still remained below the 93 per cent performance levels achieved in 2002–03.

The timeframe for connection of services in major rural, minor rural and remote areas was reduced from October 2003. These areas subsequently experienced a sharp drop in connection performance in 2003–04, due to the tighter timeframes. Connection performance for major rural and minor rural areas in 2004–05 remained steady. The performance for connection of services in remote areas continued to decline in 2004–05, with a further fall of five percentage points from the previous year to its lowest level for any area at 81 per cent.

Table 8.5: Telstra – percentage GDDS connected within timeframes, 2002–03 to 2004–05

	Connection type	Timeframe (working days)*		2002–03	2003–04	2004–05
		Before 1 October 2003	From 1 October 2003			
National	In-place	5	5	98%	97%	97%
Urban	New service	10	10	93%	88%	90%
Major rural	New service	15	10	95%	85%	85%
Minor rural	New service	30	10	98%	83%	83%
Remote	New service	30	15	98%	86%	81%

*\*Note: If ISDN repeater equipment is required, an extra five working days is added to these timeframes.*

Table 8.6 shows Telstra's performance in repairing faults associated with basic rate ISDN services. In urban and remote areas, Telstra's performance in 2004–05 remained steady relative to the previous year, but was still well below performance in 2002–03 when levels were above 90 per cent. Performance in major rural and minor rural areas continued to decline from 95 per cent in 2002–03, to 85 per cent in major rural areas and to 80 per cent in minor rural areas in 2004–05.

Telstra reported that there was an increase in the number of ISDN users in minor rural areas, with a resulting increase in the number of faults creating pressure on fault repair performance in such areas. Telstra also advised that some areas of Queensland and northern New South Wales experienced lightning-related problems affecting the network. No explanation was provided by Telstra in its report regarding the continued decline in performance in major rural areas. ACMA will require Telstra to develop strategies to address this decline.

Table 8.6: Telstra – percentage of GDDS faults repaired within timeframes, 2002–03 to 2004–05

	Timeframe (working days)	2002–03	2003–04	2004–05
Urban	1	93%	81%	82%
Major rural	2	95%	89%	85%
Minor rural	2	95%	86%	80%
Remote	3	93%	88%	88%

In its GDDS plan, Telstra undertakes to ‘use reasonable endeavours to achieve an access availability of 99.7 per cent of the time over a continuous 12 calendar month period.’ For 2004–05, Telstra reported that it achieved 99.9 per cent availability as measured by its Global Operations Centre. The measure is derived by obtaining the total number of minutes downtime experienced annually by ISDN-capable exchanges throughout Australia and deducting this from the total available minutes in the year, to derive annual access availability. The stated figure relates to ISDN exchange availability and does not provide the overall ISDN network availability because this would require other parameters, including transmission availability—the inter-exchange network—and multiple-switch calculations to be taken into account.

### Special digital data service obligation

Telstra and Hotkey Internet Services Pty Ltd are the two declared providers of the SDDS. Both provide a one-way satellite internet service, which enables customers to download data from an ISP using the satellite link and upload data to the ISP through a dial-up modem on the customer’s telephone service. The rate achieved on the upload link depends on the data transmission capability of the customer’s telephone service.

A rebate, funded by the telecommunications industry under the universal service regime, is paid to customers for the purchase and installation of satellite equipment. The rebate is 50 per cent of the cost of purchase and installation of equipment or \$765, whichever is lower.

## 8

#### *Fulfilment of the special digital data service obligation*

Telstra’s plan for SDDS areas sets out how it will fulfil its SDDS obligation and contains target timeframes for connections and repairs.

Table 8.7 shows Telstra’s performance in providing SDDS connections. The most significant change in performance occurred in urban areas, with a decline of 21 percentage points between 2003–04 and 2004–05. However, this was on a very low volume of activity, with only six connections missed in 2004–05 compared with two in the previous year.

Major rural areas show the same pattern—a significant drop in percentage terms resulting from only a small change in the number of connections missed. In this context, it is more appropriate to measure the change in performance in terms of the actual number of connections involved. Based on this approach, Telstra’s SDDS connection performance in 2004–05 is broadly similar to the performance achieved in 2003–04.

Table 8.7: Telstra – SDDS connected within timeframes, 2003–04 to 2004–05

	Timeframe from 1 October 2003 (working days)	2003–04			2004–05		
		% met	Number met timeframes	Total number of connections	% met	Number met timeframes	Total number of connections
Urban	20	97%	68	70	76%	17	23
Major rural	20	93%	27	29	87%	8	9
Minor rural	20	82%	160	195	92%	31	34
Remote	30	100%	13	13	100%	3	3
Average/ total in all areas		87%	268	307	85%	59	69

Telstra's performance in repairing one-way satellite services within the required timeframes remained steady in 2004–05 compared with the previous year (see Table 8.8). These performance levels remain below those achieved in 2002–03.

Table 8.8: Telstra – percentage of SDDS faults repaired within timeframes, 2002–03 to 2004–05

	Timeframe (working days)	2002–03	2003–04	2004–05
Urban	1	95%	92%	91%
Rural	2	96%	94%	94%
Remote	3	98%	94%	94%

Telstra states in its SDDS plan that its target access availability for satellite downlink services is 99.2 per cent over a continuous 12-month period. During 2004–05, Telstra reported that it achieved 99.9 per cent availability nationally.

In 2003–04, Telstra supplied 307 SDDSs and submitted a rebate claim of \$92,049. In 2004–05, Telstra supplied 69 SDDSs and submitted a rebate claim of \$20,546. In both years, the average rebate claim was about \$300 for each service supplied. Table 8.9 shows the number of services supplied by type of area over the past three years, which indicates that there has been a steady decline in the number of SDDS connections during that period. Telstra claimed that a key reason for this decline was the introduction of the government's Higher Bandwidth Incentive Scheme initiative.

Table 8.9: Telstra – number of special digital data services supplied, 2002–03 to 2004–05

	2002–03	2003–04	2004–05
Urban	178	70	23
Rural	301	224	43
Remote	9	13	3
Total	488	307	69

Hotkey, the other SDDS provider, did not provide any SDDSs in 2004–05.

## USO FUNDING

Universal service providers and digital data service providers can submit claims for universal service subsidies and digital data costs incurred during the preceding financial year. These costs are shared among participating persons, that is, carriers. The amount contributed by each participating person is based on its share of total eligible revenue.

### Levy credit claims for 2003–04

Telstra, as the universal service provider and a digital data service provider, and Hotkey, as a digital data service provider, submitted claims in 2004–05 for costs incurred in 2003–04. More information about these claims is in the ACA's telecommunications performance report for 2003–04 and its annual report for 2004–05.

### Levy credit claims for 2004–05

In July 2005, Telstra, as the universal service provider and a digital data service provider, submitted claims as follows:

- a universal service subsidies claim for \$211,335,917—this amount was consistent with the amounts determined by the Minister; and
- a digital data cost claim for \$20,546—this claim was for provision of 69 SDDSs and represents a significant decrease of \$71,503 compared with the previous year, with 238 fewer services provided.

Hotkey did not submit a claim for 2004–05.

The combined total cost of \$211,356,463 for 2004–05 will be funded from 108 participating persons, based on eligible revenue for 2003–04. AAPT, the Optus Group, the Telstra Group and Vodafone are expected to contribute 95.3 per cent of the total cost for 2004–05. In 2003–04, these carriers contributed 95.5 per cent. Table 8.10 shows the liabilities and entitlements for these carriers for 2004–05. Seventeen participating persons were assessed as having nil eligible revenue for 2003–04 and were not required to contribute to the costs incurred. Based on the respective eligible revenue, the levies of the remaining carriers range between \$16.52 and \$2,040,106.27.

Table 8.10: Liabilities and entitlements for participating persons, 2004–05 (nearest \$)

Carrier	Total cost claims	Levy debit	Levy payable	Levy receivable
AAPT		\$5,534,490	\$5,534,490	
Optus Group		\$41,276,252	\$41,276,252	
Telstra Group	\$211,356,463	\$143,484,175		\$68,275,467
Vodafone		\$11,140,961	\$11,140,961	

Telstra, as the universal service provider and only provider to submit a digital data cost claim for 2004–05, was assessed as being entitled to a levy credit of \$68,275,467.12.

# chapter 9

## CHAPTER 9: REMOTE INDIGENOUS COMMUNITIES – TELECOMMUNICATIONS ISSUES

Key developments	161
Telecommunications product and service trials	162
<i>Other government initiatives</i>	163
Data collection and monitoring of telecommunications needs and services in remote Indigenous communities	164
<i>Snapshot study – equality and performance of services in Central Australia and Top End remote Indigenous region</i>	164
<i>Payphone performance in remote Indigenous communities</i>	169
<i>Accessibility and take-up of telecommunications services in remote Indigenous communities</i>	171



## CHAPTER 9: REMOTE INDIGENOUS COMMUNITIES – TELECOMMUNICATIONS ISSUES

Indigenous people living in remote communities have special needs in relation to the provision and maintenance of telecommunications services. Indigenous communities are among the most remote and disadvantaged in Australia. The need for more culturally appropriate telecommunications products and services has been recognised by recent government reviews and reports including the ACA’s *Payphone Policy Review Report*, February 2004 and DCITA’s *Universal Service Obligation and Customer Service Guarantee* report, June 2004.

This chapter reports on significant activities undertaken in remote Indigenous communities during 2004–05, including telecommunications product and service trial initiatives. It also reports on the commencement of dedicated data collection and monitoring arrangements for services in remote Indigenous communities. These arrangements incorporate access and quality of service measures to allow a more focused assessment of telecommunications service performance issues.

The availability of telecommunications services in remote Indigenous communities is also discussed in the ACMA 2005 report *Telecommunications Services Availability in Australia 2004–05: A Report on the Availability of Fixed Voice, Mobile and Data Services in Australia*.

### KEY DEVELOPMENTS

- Trials of innovative and culturally appropriate products and services commenced during 2004–05 under the Community Phones Program of the Telecommunications Action Plan for Remote Indigenous Communities (TAPRIC), an Australian Government program aimed at improving access to basic telecommunications services in remote Indigenous communities.
- Other government initiatives implemented or announced during the reporting period supported the rollout of broadband and mobile infrastructure, residential telephone, public internet access and radio services in remote Indigenous communities.

Fixed-line telephone services:

- Telstra’s fixed-line network in selected remote Indigenous communities was generally available (that is, not awaiting repair) for less time in the two study areas of Apatula and Arnhem East than in the wider Network Reliability Framework (NRF) field service areas to which those communities belonged.

- The disparity in performance under the NRF was particularly marked for the Arnhem East communities in comparison with the Northern Territory Top End region generally. Qualitative findings regarding these communities included community concerns about poor voice quality and service reliability.
- A greater proportion of faults were repaired within the Customer Service Guarantee (CSG) timeframes compared with performance in remote areas elsewhere in Australia.

#### Payphones:

- Telstra reported that all payphone installations completed during the reporting period in remote Indigenous communities met the nine-month timeframe for installation.
- Telstra's performance in meeting payphone fault repair timeframes in remote Indigenous communities compared favourably with its national performance in remote areas.

#### Accessibility and take-up:

- Access to telecommunications services, in terms of the total number of fixed telephone services and payphones provided to remote Indigenous communities, increased from 14,590 in December 2003 to 15,368 services in June 2005.
- According to data provided by Telstra, 34 per cent of remote Indigenous communities do not have access to either a fixed telephone or payphone. The main reasons for this relate to difficulties in obtaining a telephone service in remote areas that are far from existing network infrastructure.
- During 2004–05, 89 applications from Indigenous community corporations were approved under the Satellite Phone Subsidy Scheme. This scheme provides a subsidy of up to \$1,500 towards the purchase of a satellite phone handset.

## TELECOMMUNICATIONS PRODUCT AND SERVICE TRIALS

Significant progress was made during 2004–05 in the implementation and testing of innovative and culturally appropriate products and services to remote Indigenous communities.

In July 2004, an Indigenous Telecommunications Steering Group was established to progress issues involving the adequacy of telecommunications services in Indigenous communities. Comprised of representatives from DCITA, ACMA and Telstra, the Steering Group has been overseeing the development of products for trial under the TAPRIC Community Phones Program (CPP), as well as progressing issues relating to the implementation of Payphone Policy Review recommendations.

The CPP is aimed at improving access to telecommunications services for people living in remote Indigenous communities. It comprises five initiatives, which involve new telephone access services, new methods of managing telephone accounts and better communication and liaison with Indigenous communities. See Table 9.1. Product and service trials commenced during 2004–05.

DCITA awarded Telstra a \$3 million contract under the CPP to install new community phones in up to 200 remote communities and undertake a series of further pilot programs to assess new Telstra pre-paid products and a robust phone casing. Telstra also contributed \$1 million to this program to trial CDMA wireless local loop (WLL) access technology in the Dampier Peninsula. In 2005–06, the Steering Group will evaluate the effectiveness of these new approaches in increasing access and take-up of telecommunications services.

Table 9.1: Description of trial initiatives under the Community Phones Program

CPP trial initiative	Description of trial product/service
1. Provision of community phones	A shared telephone service using a normal telephone handset but placed in a location where there is 24-hour access. The care of the phone is the responsibility of each community and the phone can be placed in a robust phone casing if requested by a community.
2. Robust phone casing	A steel casing placed over a standard telephone to overcome extreme weather conditions, such as storms and cyclones, and to resist breakages. Phones with the robust casing will provide a card-only service and require pre-paid calling cards to make calls. The casing was developed jointly by the Centre for Appropriate Technology (a national Indigenous science and technology organisation) and Telstra.
3. Regional agents	Responsible for liaison between telecommunications providers and remote Indigenous communities. The primary function of the regional agents is to promote the CPP and encourage remote Indigenous communities to take up the offer of a community phone.
4. Telstra 'Country Calling Line' and 'Country Calling Card'	The Country Calling Line is a pre-paid residential telephone service available when the customer opts to have the phone access charge (rental) debited fortnightly from their Centrelink payments. The Country Calling Card allows people living within remote Indigenous communities to make pre-paid telephone calls from any fixed line.
5. Deployment of CDMA WLL technology	Identification of sites where additional base stations could provide CDMA WLL as an access technology for community phones and country calling products. CDMA WLL is a cost-effective option in areas with no existing copper wire infrastructure and has the benefit of providing mobile network coverage.

Source: DCITA

### Other government initiatives

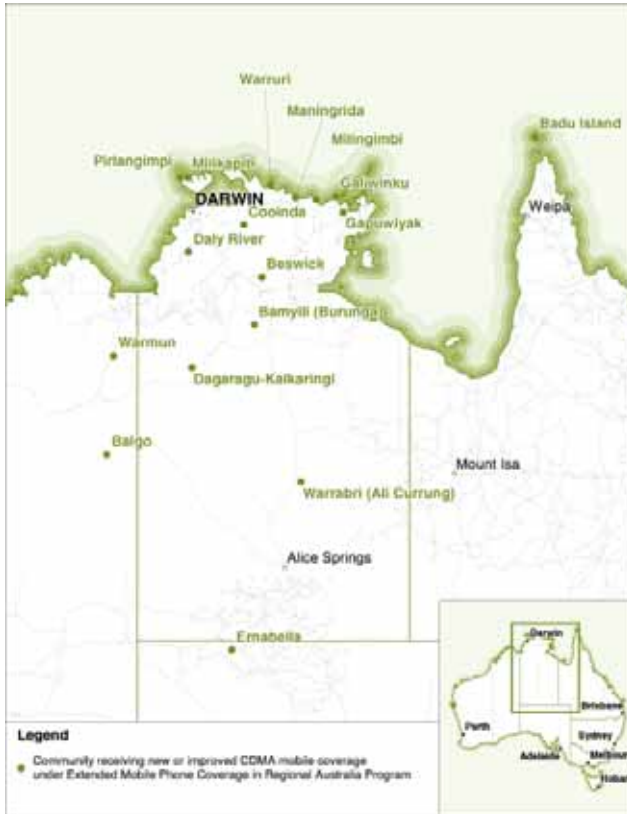
Australian Government programs aimed at improving communications for Indigenous people living in remote communities are outlined in this section.

Under the government's \$23.7 million Coordinated Communications Infrastructure Fund (CCIF), funding was awarded for regional broadband infrastructure projects in Indigenous communities in the Ngaanyatjarra lands, the Kimberley region and remote north-west Northern Territory.

Through the Networking the Nation program, the government has provided funding for projects to improve communications in remote Indigenous communities across Australia. These projects included the provision of residential telephone services, radiocommunications, public internet access, increased mobile phone coverage and broadband infrastructure.

New or improved mobile phone coverage will be provided to 17 remote Indigenous communities as part of the government's Extended Mobile Phone Coverage in Regional Australia program. This is expected to be completed in late 2006. Several remote Indigenous communities have already received mobile coverage through previous programs to provide mobile phone services to regional towns and highways, with the majority of these services completed by June 2005.

Figure 9.1: Remote Indigenous communities receiving CDMA coverage under the Extended Mobile Phone Coverage in Regional Australia program



State government programs have also provided funding for communications in remote Indigenous communities. Some programs have involved provision of state or territory funding in concert with CCIF or Networking the Nation funding and contributions from service providers. Such programs have included the establishment of interactive distance learning services to isolated Indigenous communities in the Northern Territory and the provision of training for local Cape York Indigenous people to install and maintain broadband infrastructure.

## DATA COLLECTION AND MONITORING OF TELECOMMUNICATIONS NEEDS AND SERVICES IN REMOTE INDIGENOUS COMMUNITIES

New data collection and monitoring arrangements were implemented by the former ACA during 2004–05, with a specific focus on the availability, take-up and performance of telecommunications services in remote Indigenous communities.

### Snapshot study – equality and performance of services in Central Australia and Top End remote Indigenous regions

## 9

#### *Aim and approach*

As part of its ongoing monitoring of compliance with the provision of standard telephone services (STS) under the universal service obligation (USO), the CSG and the NRF, the ACA conducted a study to provide a ‘snapshot’ of the quality and performance of services in remote Indigenous communities during 2005.

The study focused on exchange service areas (ESAs) where remote communities exist in reasonable density. ESAs are the surrounding areas served by a single telephone exchange, of which there are approximately 5,000 in Australia. The study made use of current industry reporting systems and comprises:

- quantitative performance monitoring through analysis of Telstra data on the performance of a particular ESA against CSG and NRF measures; and
- qualitative field monitoring through site visits to selected remote Indigenous communities to independently assess and verify network availability, serviceability and customer satisfaction with connections and fault rectification.

Indigenous communities in Apatula and the Arnhem East area were selected to be part of the snapshot study using the following criteria:

- density and representation of Indigenous communities in particular ESAs;
- number of fixed services in operation (SIOs) in Indigenous communities;
- total fixed SIOs in remote Indigenous communities as a percentage of total fixed SIOs in the chosen ESA; and
- location and community interest in telecommunications issues.

Telstra is the main supplier of telecommunications services to these regions. To understand the relative performance levels experienced in remote Indigenous communities, the ACA compared the quality of service of the study areas with the quality of service achieved in the broader geographic areas. Telstra was the source of information about CSG and NRF performance. Table 9.2 shows the broader geographic areas to which the Apatula and Arnhem East snapshot study areas belong.

Table 9.2: Snapshot study area and broader geographic areas under the NRF and CSG

Snapshot study area	NRF field service area	CSG categories
Apatula	Central Australia	Remote (national and Northern Territory)
Arnhem East	Northern Territory Top End	Remote (national and Northern Territory)

Source: Telstra

The ACA used observations gained through qualitative field monitoring to provide ‘on the ground’ insights into the NRF and CSG measures of performance. During site visits, ACA staff consulted community leaders (who were usually also the chairpersons of the local community government council), councillors (elders and other traditional owners), and others who could speak on behalf of the communities about telecommunications issues, such as town clerks and council staff.

This snapshot study represents the start of an ongoing ACMA program to examine the quality of service in remote Indigenous communities.

#### Regional profiles – Apatula

Located in the southern third of the Northern Territory, the Apatula region is a major tourist destination and is home to Uluru, the Olgas and the town of Alice Springs. The region extends to the Western Australian, South Australian and Queensland borders and includes both desert and mountain lands. Major industries in the Apatula region include pastoralism, mining, oil and gas, defence and Indigenous arts and culture.

The quality of service snapshot focused on communities in the centre of the region—see Figure 9.2 for an indication of the area of study. The area of study corresponds to the boundary of the Plenty ESA. References to ‘Apatula’ throughout the rest of this chapter refer to the specific area of study.

Figure 9.2: Apatula and surrounding areas

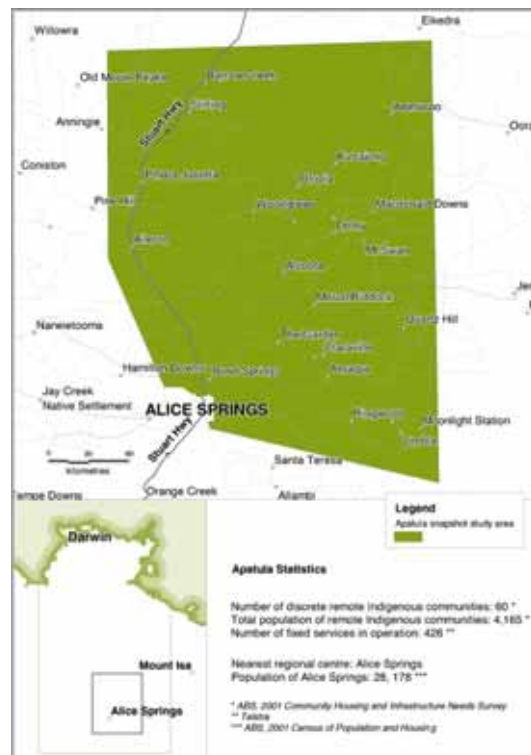
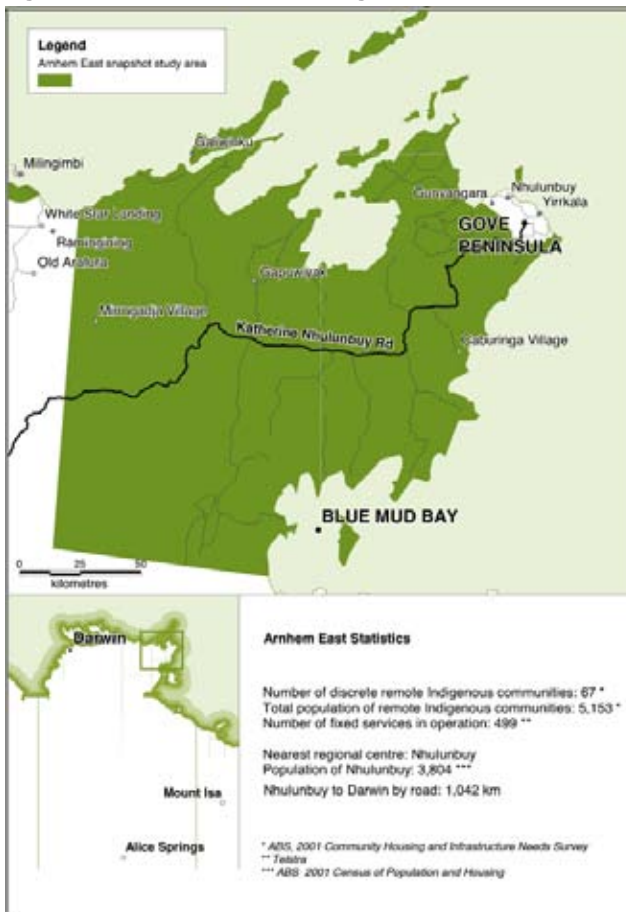


Figure 9.3: Arnhem East and surrounding areas



### Regional profiles – Arnhem East

Arnhem Land is located in the north-east extremity of the Northern Territory and spans an area of almost 100,000 square kilometres, which is solely owned by Yolngu people. Traditional Yolngu culture remains a strong influence in the Arnhem East region. Mining is the dominant industry, with the mining towns of Nhulunbuy and Alyangula the region's major centres.

The snapshot study focused on the Gove Peninsula region of Arnhem East, in particular communities located in, or with connections to, traditional lands in the Laynhapuy Homelands. The Laynhapuy Homelands comprise 18 remote outstations and represent approximately 14 per cent of remote Indigenous communities in the Arnhem East region. See Figure 9.3 for an indication of ACMA's area of study. ACMA's area of study corresponds with the Arnhem East ESA and smaller ESAs of Milingimbi and Galiwinku. References to 'Arnhem East' throughout the rest of this chapter refer to the specific area of study.

### Snapshot findings – Apatula

#### Service availability and quality of service performance

Under the NRF, Telstra provides detailed network performance reports on faults in its fixed-line network. All Telstra services covered by the CSG (residential and small business customers with five lines or less) are included. This case study uses the following NRF measures:

- Level 1 – the percentage of time in a month that services on average were available (that is, not awaiting repair). Availability is measured across all services, whether or not they had a fault in the month. Good performance not only requires few services getting a fault, but also that those services receive both a quick and effective (to prevent multiple faults in the month) repair service;
- Level 2 – ESAs that breach a threshold in terms of the number of services that experience a fault in two consecutive months;
- Level 3 – individual services that do not meet an adequate level of reliability, in particular those experiencing more than four faults in a rolling 60-day period or more than five faults in a rolling 365-day period.



As shown in Table 9.2, the Apatula region falls within the broader field service area (FSA) of Central Australia. Central Australia typically experiences low levels of rainfall and rare lightning strikes that may affect network performance under the NRF. In comparison to other country-based FSAs, Central Australia has a very low percentage of services having a fault each month, and services that do have a fault in the month have a downtime that is just below average.

Overall, services in Central Australia were available for an average of 99.95 per cent of the time in each month in 2004–05, making it easily the best performing of the 23 country-based FSAs. This performance translates into services being unavailable for an average of four hours over the year.

During 2004–05, services in Apatula communities were available on average for less time over the year than services in the broader FSA of Central Australia. Services in Apatula communities were, on average, unavailable for around four times as many hours during 2004–05 as services in Central Australia. It may be reasonable for the broader Central Australia FSA to perform better because it includes larger population centres, such as Alice Springs, which generally perform better than dispersed communities. However, ACMA is concerned about the magnitude of the local performance variations and has requested further clarification from Telstra on the reasons for its performance levels identified in the study areas.

Since the NRF was introduced in January 2003, there has been only one occasion where the Apatula area has breached level 2 of the NRF, with four services having a fault in two consecutive months. However, ACMA does not believe that the current level 2 measure is effective in identifying areas with reliability problems and that there is only limited benefit in looking at level 2 performance. The level 2 arrangements will be improved as a result of the ACA's review of the NRF, as discussed in Chapter 8.

Over the same period, no services in the Apatula area breached level 3 of the NRF. This is not surprising because only a minute percentage of services breach the level 3 thresholds and there are only a small number of services in the Apatula area.

Qualitative data collected by the ACA in its field visits to Apatula communities did not reveal any community concerns regarding the reliability of fixed services. Most of the fault repair issues raised by communities in Apatula were about payphone performance, which is discussed later in this chapter.

#### *Service repair and connection performance*

Under the CSG, services in Apatula are required to be repaired within three working days of a customer reporting a fault. Of the 426 fixed SIOs in Apatula, 255 were CSG-eligible—approximately 60 per cent of fixed SIOs. Of the small number of fault repairs—less than 100—undertaken during 2004–05, virtually all were repaired within the CSG timeframe, with about one in 20 fault repairs in Apatula not completed within the CSG timeframe. This fault restoration performance was marginally better than Telstra's performance in remote areas, both nationally (92 per cent completed within CSG timeframes) and in the Northern Territory (94 per cent).

The CSG also requires new services to be connected within a specified timeframe from receipt of the customer's application for a service. In remote areas, this timeframe is:

- where there is an in-place connection, two working days;
- where a new service is required and the premises are located close to available telecommunications infrastructure, 15 working days; and
- where a new service is required and there is no available infrastructure, 20 working days.

A low volume of CSG connections—also less than 100—were made during 2004–05 in Apatula. During 2004–05, all in-place connections were completed within the connection timeframe, while the majority of new services, both with and without infrastructure, were connected within the timeframes. In-place connection performance in Apatula was comparable with Telstra's in-place connection performance in remote areas nationally and in the Northern Territory. For new service connections in areas with or without infrastructure, only a small number of new service connections were completed in Apatula during 2004–05, which made it difficult to draw performance comparisons.

ACMA acknowledges that Telstra faces challenges in servicing many communities in remote areas, in the form of physical distances and environmental factors that affect the accessibility of the communities. In Apatula, it was observed that some communities were generally well-serviced in terms of road infrastructure and located in proximity to major roadways such as the Stuart Highway, while other communities were more physically isolated, with accessibility dependent on weather and road conditions.

Communities did not raise any issues about the timeliness of service restoration or connection of CSG-eligible services. However, there were community concerns about the timeliness of provision of services that were not subject to CSG timeframes, such as services delivered under commercial contractual arrangements.

#### *Current/future service initiatives*

Information provided by Telstra shows that during 2004–05, three community phones were installed in the Apatula region under the CPP. Two phones were installed in Santa Teresa and one was installed in Pmara Jutunta, with both communities requesting and receiving the option of the card-only robust phone casing. Additional community phones are expected to be installed in Apatula communities during the 2005–06 reporting period.

#### *Snapshot findings – Arnhem East*

##### *Service availability and quality of service performance*

The Arnhem East region falls within the broader FSA of Northern Territory Top End (NT Top End). NT Top End receives some of the heaviest rainfall in Australia, with tropical monsoon rainfall between November and April, and a very high number of lightning strikes. Consistent with its climatic conditions and low population density, NT Top End was one of the worst performing of the 44 FSAs in Australia in 2004–05 in terms of the percentage of services without a fault. However, compared with other country-based FSAs, faults in NT Top End were repaired both quickly and effectively, which means that relatively few services experienced multiple faults in each month.

Overall, NT Top End recorded a monthly average availability of 99.89 per cent during 2004–05, which equates to the average service being unavailable for 10 hours a year—higher than the national average of six hours a year.

The monthly average availability of services in Arnhem East communities was significantly worse than in NT Top End, particularly for the Arnhem East ESA. The monthly average availability figures translate to services being unavailable, on average, for 10 times as many hours in the Arnhem East ESA compared with services in NT Top End during 2004–05. Services in the Galiwinku and Milingimbi ESAs were unavailable, on average, three and 4.5 times as many hours respectively compared with NT Top End.

9 In light of the large disparity in performance between the individual ESAs and the wider NT Top End area, ACMA is seeking clarification from Telstra about the local service conditions affecting performance in Arnhem East.

Two of the three ESAs in the Arnhem East area, Arnhem East and Galiwinku, have breached the level 2 thresholds once since the NRF was introduced in January 2003. On both occasions, no more than three services were in breach at the time. Over the same period, no services in the Arnhem East area breached level 3 of the NRF.

Qualitative findings from the field visits to Arnhem East communities confirmed that telephone services in this area are less reliable. Voice quality and service availability were issues of concern to these communities. They advised that calls on fixed telephones were sometimes unclear and numbers may have to be dialled three or four times before establishing a connection. The telephones could also be out of action for weeks at a time—although this problem was often due to the service being disconnected because of unpaid bills.



Static and ‘clicking’ noises were observed by ACA staff during phone calls made from Nhulunbuy to one of the Homelands communities. According to Telstra operations staff, the humid conditions in the region can cause corrosion in the phone sockets, which erode the phone socket contacts, creating static and eventually causing the phone to fail. A community leader advised that rather than report such voice quality issues as faults to Telstra, people in his community tended to put up with the problems or would try another phone in the community.

#### *Service repair and connection performance*

Under the CSG, services in Arnhem East are required to be repaired within three working days of a customer reporting a fault. At 30 June 2005, there were 499 fixed SIOs in Arnhem East, of which 251, or 50 per cent of services, were CSG-eligible. During 2004–05, fewer than 200 fault repairs were completed with one in 20 not completed within the CSG timeframe. This level of performance was marginally better than Telstra’s performance in remote areas at a national and territory level.

Fewer than 300 services were connected during 2004–05 in Arnhem East communities. Telstra completed a high proportion of these connections within the CSG timeframes and its in-place connection performance and connection of new services in areas with infrastructure in Arnhem East was generally consistent with its connection performance in remote areas nationally and in the Northern Territory. For connection of new services in areas without infrastructure, the very small number of such connections in Arnhem East during 2004–05 made it difficult to compare Telstra’s performance in the region with broader geographic areas.

Telstra’s service restoration and connection performance in Arnhem East has been achieved in an area where there are particular environmental and logistical issues involved in providing services. During the ACA field visit in June 2005, Telstra operations staff in Nhulunbuy advised that it had helicopters on permanent charter for technicians to travel out to remote areas to repair faults. Charter flights were a common form of transport because of the poor condition of roads in the region and distances involved. Flooding or cyclones may also cause some communities to be physically isolated during the year.

#### *Current and future service initiatives*

One East Arnhem community (Bodiya) had CDMA mobile coverage at 30 June 2005. Three remote Indigenous communities in East Arnhem—Galiwinku, Gapuwiyak and Milingimbi—are scheduled to receive CDMA mobile coverage by late 2006 under a government program to provide extended mobile coverage in regional areas.

### **Payphone performance in remote Indigenous communities**

In June 2005, the ACA approved a variation to Telstra’s USO standard marketing plan (SMP) that implemented the government’s response to several of the 31 accepted Payphone Policy Review recommendations. The SMP variation included a refined process for siting payphones within remote Indigenous communities. Further work is under way to address the Payphone Policy Review recommendations concerned with payphone provision to communities with less than 50 people.

#### *Number of payphones*

Telstra reported that, at 30 June 2005, there were 543 payphone sites located in remote Indigenous communities, up from 491 payphone sites in 2003–04. This represents around two per cent of Telstra payphone sites in Australia, but comprises 42 per cent of Telstra payphones sites in remote areas. The increase in Telstra payphone sites in remote Indigenous communities is significant in light of the declining number of payphone sites across Australia during 2004–05.

Non-Telstra payphones were less numerous. As at 30 June 2005, there were 68 non-Telstra payphone sites in remote Indigenous communities. Telstra also reported that, as at 30 June 2005, there were 897 payphones in remote Indigenous communities, up from 853 in December 2003. This figure does not include payphones installed under the CPP.

### *Payphone installation performance*

Telstra's SMP specifies a timeframe of nine months for installation of a payphone in remote areas, commencing from the time the applicant is informed of the decision to install a payphone. The SMP also states that Telstra will inform customers of its decision after approximately three months of receiving the request for a payphone. This means that the overall timeframe from Telstra's receipt of a payphone request to installation of the payphone is just over 12 months.

Telstra reported (see Table 9.3) that the 10 Telstra-operated payphones installed during 2004–05 were all installed within the nine-month timeframe specified in Telstra's SMP, in areas with or without infrastructure.

Table 9.3: Telstra's performance in meeting payphone installation timeframe for remote areas, 2004–05

	Remote areas (9-month timeframe)	Remote Indigenous communities (9-month timeframe)
Number	19	10
Installed within timeframe	100%	100%

*Source: Telstra*

The ACA received feedback from one community visited as part of the snapshot study that it had been waiting for 15 months for a payphone to be installed. It is possible that delays in the initial decision-making process may add to the overall time an applicant may wait for a payphone to be installed, without breaching the nine-month timeframe.

Telstra reported that 16 applications for payphones in remote Indigenous communities were received during 2004–05, of which six were rejected. Under its SMP, Telstra must have regard to the following factors in making a decision to install a payphone:

- whether the request meets the criteria for Telstra to fulfil the USO or is commercially justified;
- the need to obtain necessary approvals from third parties;
- access of the site to mains power; and
- environmental and safety considerations.

The ACA observed that there were community perceptions that commercial considerations were given precedence in the decision-making process. For instance, one community advised the ACA that its application for additional payphones had been refused on the grounds that the payphones would not be economic.

9

### *Payphone fault repair performance*

Payphones fulfil a lifeline service in remote Indigenous communities and are often the primary or sole telecommunications service for many communities. Payphone faults have a more detrimental impact on remote Indigenous communities than other remote telecommunications users with access to other services.

Telstra reported that, during the 2004–05 reporting period, 86 per cent of all faults on Telstra-operated payphones in remote Indigenous communities were repaired within the timeframe of three working days of being notified of the fault, as specified in the SMP.

Table 9.4 is the frequency distribution of the time taken to repair Telstra-operated payphones in remote Indigenous communities in comparison with the time taken to repair Telstra payphones in remote areas. It also shows that during 2004–05, Telstra’s payphone repair performance in remote Indigenous communities compared favourably with its payphone fault repair performance in remote areas as a whole.

Table 9.4: Frequency distribution – time taken to repair Telstra payphones, 2004–05

	Remote (%)	Remote Indigenous Communities (%)
Within specified timeframe of end of three full working days	82.0	86.0
Plus one working day	5.1	3.9
Plus two working days	3.0	2.4
Plus three working days	2.1	1.6
Plus 4 working days	1.5	1.2
Plus 5 working days	1.3	0.9
Plus 6 or more working days	5.0	4.3

Source: Telstra

Fault repair performance was marginally better in remote Indigenous communities than in remote areas for both fixed-line and payphone services. Telstra’s fault repair performance for payphones in remote Indigenous communities did not compare favourably with the snapshot study findings regarding its fixed-line fault repair performance.

The ACA’s field visits revealed qualitative information about the experiences of communities regarding payphone faults and restoration of service. The types of faults mentioned by communities were lack of voice clarity, inability to be heard at the other end of a call, or the payphone being out of service. Traditional owners and community representatives in both Apatula and East Arnhem advised the ACA that such faults occurred regularly—in one case, every time it rained—and took three to four weeks on average to be repaired.

## Accessibility and take-up of telecommunications services in remote Indigenous communities

### *Access to telecommunications services*

ACMA monitors the range and take-up of telecommunications services in remote Indigenous communities through the TAPRIC database. A key component of the TAPRIC program, the database contains detailed information on telecommunications services. Information on telecommunications availability is collected and updated by Telstra for more than 1,000 discrete Indigenous communities listed in the database.

In addition to the STS, payphones, mobile coverage and the trial initiatives outlined earlier, the range of services available to people living in remote Indigenous communities includes InContact services provided under the iConnect project. The iConnect project is run by PYMedia, an Indigenous communications organisation, who received funding under the Networking the Nation Program. The project involved the rollout of pre-paid residential telephone services to Indigenous households throughout Western Australia, South Australia and the Northern Territory.

Table 9.5 shows that basic service availability, in terms of total numbers of services provided, increased from December 2003 to June 2005.

Table 9.5: Increase in services in remote Indigenous communities, December 2003 and June 2005

	December 2003	June 2005	Change
Payphones	853	897	+44
STS (fixed/home phone)	13,737	13,985	+248
Community phones	None	39	+39
InContact services	Data not available	447	–

Source: Telstra

Data provided by Telstra provides a picture of access to telecommunications in remote Indigenous communities in June 2005. The ACA examined accessibility in terms of the number of services in communities generally and in communities of particular sizes, as a proportion of total communities reported by Telstra for 2004–05. Table 9.6 shows that 62.9 per cent of communities have access to at least one STS, while 48.7 per cent of communities have access to at least one payphone. Approximately one-third of communities do not have access to either an STS or payphone. Out of the total communities reported on by Telstra, communities with a low population—particularly those with a population of 10 and under—have less access to STSs and payphones than communities with a larger population.

ACMA expects that access to basic telecommunications services in remote Indigenous communities will continue to improve in the future, following the completion of product trials under the CPP and the further implementation of the recommendations of the Payphone Policy Review.

Table 9.6: Communities listed in TAPRIC database – population information and community access to STS and payphones, 2005

Characteristic	Total communities reported (%)
<b>Population</b>	
Communities with population of 10 and under	30.6
Communities with population of 11–20	19.6
Communities with population of 21–50	19.7
Communities with population of 51–100	10.1
Communities with population of 101–500	16.0
Communities with population of 501 or more	3.8
<b>STS (fixed or home telephone)</b>	
Communities with access to at least one STS	62.9
Communities with population of 10 and under with no STSs	19.7
Communities with population of 11 to 20 with no STSs	9.7
Communities with population of 21 to 50 with no STSs	6.4
Communities with population of 51 to 100 with no STSs	1.0
Communities with population of 101 to 500 with no STSs	0.4
Communities with population of 501 or more with no STSs	0
<b>Payphones</b>	
Communities with access to at least one payphone	48.7
Communities with population of 10 and under with no payphones	25.1
Communities with population of 11 to 20 with no payphones	13.2
Communities with population of 21 to 50 with no payphones	8.5
<b>STS and payphones</b>	
Communities with population of 51 to 100 with no payphones	2.6
Communities with population of 101 to 500 with no payphones	1.7
Communities with population of 501 or more with no payphones	0.1
Communities with access to either STS or payphones	66.4
Communities with no access to either STS or payphones	33.6
<b>Mobile services</b>	
Communities with access to terrestrial mobile coverage	24.1
Communities with no access to terrestrial mobile coverage	75.9

Sources: Population data – 2001 ABS report on Housing Infrastructure in Aboriginal and Torres Strait Islander Communities (the CHINS survey); Telecommunications data – Telstra, June 2005

# chapter 10

## CHAPTER 10: COMMUNITY AND NATIONAL INTERESTS

Key developments	175
Emergency call service	176
<i>Performance of the emergency call persons</i>	176
<i>Emergency call service legislative amendment</i>	181
<i>Emergency call trends and issues</i>	181
Provision of assistance to law enforcement and national security agencies	183
<i>Obligations of carriers and carriage service providers</i>	183
<i>Interception capabilities</i>	183
Integrated Public Number Database	184
<i>IPND overview</i>	184
<i>Audits of the accuracy of the IPND</i>	184
Disclosure of customer information	186
Installation of telecommunications facilities – carrier rights and obligations	188
<i>Investigation of complaints</i>	188
<i>Regulation of electromagnetic radiation</i>	189
<i>Industry responses to community concerns</i>	189

## CHAPTER 10: COMMUNITY AND NATIONAL INTERESTS

Meeting Australia's national and community interests presents complex challenges to the telecommunications industry. The industry has obligations to protect the interests of the community and to ensure the effective operation of telecommunications services for emergency call services, national security and law enforcement agencies.

This chapter reports on industry compliance with the legislative obligations on carriers and carriage services providers (CSPs) in:

- providing access to emergency call services;
- assisting law enforcement and national security agencies in protecting national and community interests;
- providing information to the national Integrated Public Number Database (IPND);
- protecting the privacy of customers by ensuring that the disclosure of communications and customers' personal information is lawful; and
- managing the provision of low-impact communications facilities associated with the rollout of wireless communication networks.

### KEY DEVELOPMENTS

- There was a welcome 15 per cent drop (1.9 million) in calls offered to the emergency call service numbers, 000 and 112, from 2003–04, which demonstrates the effectiveness of recent initiatives introduced to improve the call-handling arrangements for emergency service calls.
- Calls to 000 and 112 are increasingly originating from mobile phones, which accounted for 64.1 per cent (or 6.9 million) of calls to these numbers over the year. In comparison, 30.5 per cent of calls were from fixed-line telephones.
- Only 23 per cent of mobile calls to 000 and 112 were connected to an emergency service organisation (ESO), compared with 67 per cent for calls from fixed telephone services, indicating that fixed services are a significantly more important source of genuine calls to emergency services than mobile phone services, despite the greater number of calls made from mobiles.
- There has been a significant increase in the level of awareness that the emergency number 112 can be dialled as an alternative to 000 by GSM mobile phone users. Awareness in 2004–05 was 10 per cent of GSM mobile phone users, compared with one per cent in 2000. However, overall awareness remains low.

10

- The cost to industry of developing, installing and maintaining interception capabilities during 2004–05 was approximately \$6.6 million, down from \$7.2 million in the previous year.
- The records held in the IPND, which contains all listed and unlisted public telephone numbers, increased by 9.7 per cent from 2003–04. There were 43.59 million IPND records at 30 June 2005. ACMA's audit of the IPND showed a small increase in the accuracy of these records, with 91.5 per cent of records assessed as having highly accurate, high or good useability.
- There was a significant increase—26 per cent—from 2003–04 in the number of disclosures of customer information made under Part 13 of the *Telecommunications Act 1997*, which permits disclosure of information in restricted circumstances, such as assisting investigations by law enforcement agencies.

## EMERGENCY CALL SERVICE

The emergency call service is an operator-assisted service that connects callers to an ESO in a life-threatening or time-critical situation. An ESO can be a police force or service; a fire brigade or service; an ambulance service; or a service for dispatching a police, fire or ambulance service.

The emergency call service is a critical service for the community. ACMA's *Telecommunications (Emergency Call Service) Determination 2002* (ECS Determination) requires carriers and CSPs that provide standard emergency telephone services to provide access to the emergency call service. The determination defines a standard emergency telephone service to be a standard telephone service that an end-user would reasonably choose, as a first choice, to make an emergency call. Short message service (SMS) is excluded from the determination.

Australia's primary emergency call service number is 000, which can be dialled from any fixed or mobile phone. The ECS Determination also requires that service providers give access to the number 112 from GSM mobile phones and to the number 106 if the service is used for another form of communication equivalent to voice communication for a person with a disability (generally text communication for people with hearing or speech impairment). All calls to the emergency numbers—whether from fixed, or mobile phones, or payphones—are free of charge.

The emergency call persons are responsible for receiving calls made to the emergency call service numbers and, if appropriate, transferring the calls to the nearest and most appropriate ESO. The *Telecommunications (Emergency Call Person) Determination 1999* specifies that Telstra is the emergency call person for calls to 000 and 112, and that the National Relay Service provider—currently Australian Communication Exchange Ltd (ACE)—is the emergency call person for calls to the text-based emergency service, 106.

The bulk of calls to the emergency call service are carried to Telstra as the emergency call person for calls to 000 and 112. Calls are routed to one of two call centres based in Sydney and Melbourne. There is full redundancy between the call centres—if one call centre is inoperative or overloaded due to an extreme event, calls can be routed to the other centre regardless of the origin of the call.

### 10 Performance of the emergency call persons

#### *Telstra*

Telstra is obliged by the ECS Determination to provide ACMA with relevant information about call volumes and call answering times for the emergency call service. Selected information for the last two reporting periods is in Table 10.1.



Table 10.1: Emergency call service statistics – 000 and 112, 2003–04 and 2004–05

	2003–04	2004–05
Total number of calls offered	12,741,247	10,807,627
Total number of calls answered	11,905,281	10,113,882
Total number of calls not answered	835,966	693,745
Percentage of calls answered	93%	94%
Percentage of answered calls answered in 5 seconds or less	96%	97%
Percentage of answered calls answered in 10 seconds or less	99%	99%
Percentage of answered calls answered in greater than 11 seconds	1%	1%
Percentage of offered calls transferred to an ESO	33%	39%
Percentage of offered calls from mobile phones	57%	64%

*Note: Data for this table differs slightly from that reported in Table 10.2 and Figures 10.1 and 10.2 because it is sourced from a different Telstra system.*

Telstra is required to answer calls to 000 (and 112) with a grade of service to ensure that:

- 85 per cent of all calls received each month are answered within five seconds; and
- 95 per cent of all calls received each month are answered within 10 seconds.

Performance against these requirements is measured by recording the percentage of answered calls answered within the relevant timeframe. This measure has been adopted because of the high number of calls abandoned by users in less than five seconds. Performance is also made more difficult to measure by the use of recorded voice announcements and interactive voice recognition systems before calls reach the answering point. These calls are recorded as ‘offered’ in the data.

In June 2005, the ECS Determination was amended to clarify that the commencement time for measuring performance is when a call reaches the emergency call person’s answering point.

In 2004–05, there were 10,807,627 calls offered to the 000 and 112 emergency call service numbers, representing a decrease of 1,933,620 calls (15 per cent) from 2003–04. Table 10.2 shows the origin of these calls by service type.

Various factors may have contributed to the reduction in the number of calls offered to the emergency call person answering point. Recorded voice announcements (RVAs) have been introduced to deal with some misdials and misdirected calls in some circumstances. Calls commencing with 000 and followed by excess digits are now directed to an RVA rather than to the emergency call person. These calls are generally misdials or inadvertent calls from mobile handsets on which the keypad has not been locked.

An introductory RVA has also been deployed so that callers wait for the call to be answered rather than making repeated unsuccessful calls. Another RVA can be deployed if there are extreme events leading to peak traffic conditions, such as in the event of major storms or bushfires. Media attention in 2004–05 reporting on prosecution for non-genuine calls may also have had a deterrent effect. Wider promotion by ESOs of the use of 000 and the Police Assistance Line are also thought to have reduced calls.

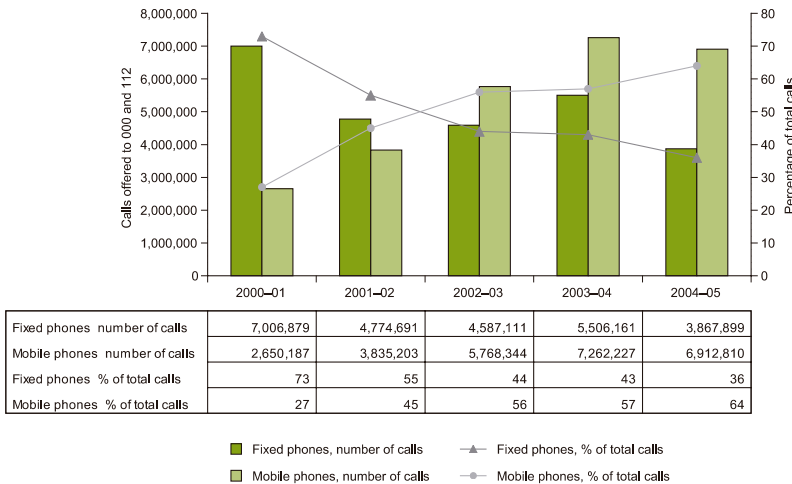
Table 10.2: Origin of calls offered to 000 and 112, 2004–05

Type of originating call	Number of calls	Percentage of total calls
Facsimile	49,328	0.5%
Payphones	526,521	4.9%
Other fixed phones	3,292,050	30.5%
Mobiles	6,912,810	64.1%

Figure 10.1 demonstrates the increasing significance in percentage terms of calls from mobile phones for calls offered to 000 and 112, although the volume of mobile phone calls actually decreased by approximately 350,000 from 2003–04 to 2004–05. This decrease also needs to be assessed in the context of the 11.8 per cent increase in the number of mobile phone services and the 12.1 per cent increase in mobile calls during 2004–05 (see Chapter 5).

The social importance of using mobile phones to contact emergency services is reflected in the continuing growth in mobile calls as a proportion of all traffic. Over the last five reporting periods, mobile traffic has grown from 27 to 64 per cent of all calls offered to 000 and 112. This presents some challenges for call answerers, such as the lack of geographically specific information attached to mobile calls and the potential for non-emergency calls from SIMless mobile handsets (discussed later in this chapter).

Figure 10.1: Fixed and mobile calls offered to 000 and 112, 2000–01 to 2004–05



A higher proportion of calls from mobile phones than from fixed telephones are not transferred to ESOs. Only 1.6 million of the 6.9 million (23 per cent) mobile phone calls to 000 and 112 during 2004–05 were connected to an ESO—the remaining calls were not connected to an ESO because they were not emergency calls. By contrast, 67 per cent (or 2.6 million) of the 3.9 million calls made from fixed telephones were connected to ESOs, demonstrating that fixed services are a significantly more important source of genuine calls to emergency services than mobile services. The total of 4.2 million genuine calls to 000 and 112 in 2004–05 was 180,000 more than the previous year.

The high incidence of non-emergency calls presents emergency call persons and ESOs with a considerable management challenge. Non-emergency calls divert call-answering resources away from callers who need an emergency response. There are multiple causes of non-emergency calls including:

- misdials;
- inadvertent calls resulting from unlocked keypads on mobile phone handsets;
- misconceptions about the appropriate use of the emergency numbers; and
- hoax and malicious calls.

A welcome development in 2004–05 was the 2.2 million fewer ‘non-genuine’ calls, or calls not connected to ESOs, compared with 2003–04 (see Figure 10.2). While this is in part attributable to the overall reduction of calls by 1.9 million over this period (Table 10.1), the increased proportion of both fixed and mobile calls connected to ESOs is also a significant and beneficial trend. Compared with 2003–04, the proportion of mobile calls connected in 2004–05 increased by five percentage points to 23 per cent and fixed calls by 18 percentage points to 67 per cent.

Figure 10.2: 000 and 112 calls connected and not connected to ESOs, 2000–01 to 2004–05

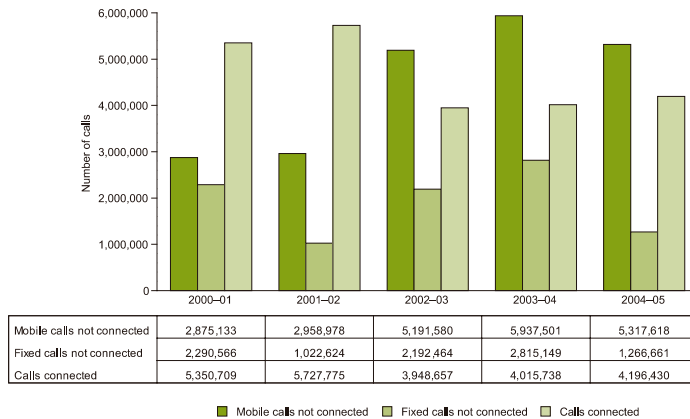


Table 10.3 disaggregates the calls to 000 and 112 received during 2004–05 according to the outcome of the calls. Caller no response (CNR) calls are those for which the calling party does not respond to the Telstra call-taker when the call has been answered. They are connected to an interactive voice response (IVR), a recording that instructs callers to press ‘55’ on their keypad if they wish to be connected to an ESO. If ‘55’ is not pressed, the call is terminated. The IVR was introduced in June 2002. There may be circumstances, such as where there is potential for violence, in which an emergency caller does not wish others in close proximity to know that a call is being made. Pressing ‘55’ silently connects callers directly to the police. On many phones, the ‘5’ button can be readily identified by touch because of a raised spot.

Table 10.3: Composition of calls to 000 and 112, 2004–05

	Number	Percentage of calls offered
CNR calls terminated by IVR	4,241,385	39.2%
CNR calls connected to police through IVR	163,330	1.5%
Aborted by caller before answered	693,745	6.4%
Aborted after answered (non-CNR)	1,512,737	14.0%
Calls transferred to ESOs	4,196,430	38.8%
Total	10,807,627	100.0%

The extent to which the CNR initiative has reduced the volume of non-emergency calls that would otherwise have been forwarded to police is evident from Table 10.3. Before the introduction of the IVR in June 2002, all CNR calls were forwarded to the police in case the caller was genuine and, for whatever reason, unable to speak. Without the IVR, Australian police services would have had to answer an additional 4.2 million calls during 2004–05.

Of the 4.4 million CNR calls to 000 and 112 in 2004–05, only 163,000 (1.5 per cent) responded to the IVR and continued the call by pressing ‘55’ to be connected to an ESO.

### *Australian Communication Exchange and the 106 emergency call service*

The Australian Communication Exchange (ACE) provides the National Relay Service (NRS) for people with hearing or speech impairment, which includes access to the emergency call number 106. This is a text-based service that allows an ACE call answerer to relay messages between text users and ESOs.

The National Relay Service contract benchmarks for 2004–05 include two service performance objectives relating to quarterly performance measurement of the 106 emergency call service. These are:

- at least 99 per cent of 106 calls must be answered within 10 seconds; and
- no more than five text emergency service calls per 1,000 (0.5 per cent) into the NRS may receive a busy signal on average per quarter.

As shown in Table 10.4, ACE consistently met the target for calls answered within 10 seconds. However, ACE failed to meet the call blocking target in the first three quarters of 2004–05. The ACA had sought undertakings from ACE regarding its performance, which it monitored closely during 2004–05. ACE met its performance standard in the final quarter of 2004–05.

Table 10.4: ACE's 106 emergency call service quarterly performance, 2003–04

	Q3 2004	Q4 2004	Q1 2005	Q2 2005
Call blockage percentage	0.81%	0.53%	0.56%	0.37%
Percentage of calls answered within 10 seconds	100%	99.9%	99.8%	99.9%

During 2004–05, 315,711 calls were made to the text-based emergency call service, of which fewer than one in a thousand related to a genuine emergency. Compared with 2003–04, this represents an increase of more than 100,000 in the total number of calls, without any increase in the number of genuine calls.

Since its inception in December 2000, the 106 emergency call service has received a total of 1,498 genuine emergency calls. The way in which those genuine calls have been relayed is shown in Table 10.5, with teletypewriter (TTY) calls still remaining the most common call type.

Table 10.5: Call type of genuine calls to 106, 2001–02 to 2004–05

Call type <sup>#</sup>	2001–02	2002–03	2003–04	2004–05
Hearing carry over	0	2	2	0
Modem	10	6	3	1
Voice carry over	30	26	17	14
Teletypewriter	364	254	267	262
Voice	0	0	9	14
Unclassified	65	21	0	0
Total	469	309	298	291

<sup>#</sup>: These call types are described in more detail in Chapter 3.

Blockage rates and the increasing number of non-genuine calls were closely monitored by the ACA during 2004–05. ACE provides ACMA with blockage figures weekly.

In May 2005, ACE began reporting potentially vexatious callers to state police forces. Since then, there has been a reduction in the total number of calls to the 106 text emergency call service.

## Emergency call service legislative amendment

On 17 June 2005, the ACA made the *Telecommunications (Emergency Call Service) Amendment Determination 2005*, which made routine changes to the ECS Determination including:

- clarifying the obligations on satellite phone providers about access to the emergency call service;
- recognising and supporting current practices designed to improve the efficiency of the emergency call service, such as an RVA for callers requesting connection to a state or territory emergency service; and
- enhancing reporting requirements.

## Emergency call trends and issues

### *Developments in handset functionality*

An increasing number of manufacturers are producing GSM and CDMA handsets for multiple jurisdictions, which have different emergency service numbers from those in Australia. Some mobile handsets now have digit number analysis for emergency numbers performed in the handset. When an emergency number is called, an emergency flag is raised in the network so that the call is routed to the emergency number with network priority over non-emergency calls that are passing over the network.

In practice, this means that if a customer in Australia has a handset that is made for multiple markets and dials any of the emergency numbers programmed into the handset, the emergency flag raisers will give the call priority in the network, routing the call directly to the emergency call person in Australia (Telstra).

### *Awareness of the 112 emergency number*

In December 2004, the Minister released the ACA report, *Awareness of the 112 emergency number*. The ACA found that:

- GSM mobile phone user awareness that 112 can be dialled as an alternative to 000 from GSM mobile phones had increased to 10 per cent compared with one per cent in 2000;
- the wide promotion of two emergency numbers (000 and 112) could cause confusion about which number to dial in an emergency and dilute the impact of the promotion of 000 as Australia's universal emergency number;
- it is imperative that promotional efforts continue to focus on educating the community about 000 (notwithstanding the high awareness of 000);
- as far as practicable, there should only be one emergency number for use in Australia; and
- a permanent and future-proof solution is to ensure that the use of 000 from GSM mobile phones has the same functionality as the use of 112, which would ultimately make awareness and use of 112 redundant.

The Minister was encouraged by the high level of awareness of 000 as the primary emergency number in Australia, and the increased level of awareness of the 112 number for GSM phones. The development by the Australian Communications Industry Forum (ACIF) of the *Industry Code ACIF C536:2003 Emergency Call Service Requirements* had been effective in raising this awareness.

### *Location-based information*

In January 2004, the ACA released a discussion paper, *Location, Location, Location*, calling for submissions on the potential future use of accurate mobile originating location information (MOLI) to enhance the emergency call service. The ACA's principal regulatory interest in MOLI is the potential benefit it can bring to emergency call service origination and the emergency call service process.

MOLI has the capacity to provide highly specific location information for emergency service organisations. ESOs have stressed to ACMA that precise location information can be crucial in time-critical emergencies and have sought access to better location information for mobile phones than is currently provided. As a routine matter, carriers currently provide the emergency call person with the standard mobile service area (SMSA) code of the caller. However, the geographic area described by an SMSA code varies greatly—it may be as large as 10,000 square kilometres. Carriers also currently provide additional assistance to ESOs on an ad hoc basis using existing network techniques based on measuring signal strength from a number of mobile base stations, providing more precise information than that available using SMSA.

There are technical considerations when determining the best form of MOLI to adopt. For example, while MOLI based on the global positioning system (GPS) is capable of very high precision in some environments, it does not provide reliable in-building information. Other potential forms of MOLI have similar strengths and weaknesses, and vary widely in terms of implementation cost and whether the technological solution is implemented in handsets or networks.

The ACA received eight submissions in response to its discussion paper. In general, respondents submitted that:

- the relatively low volume of genuine emergency calls from mobile phones would make it difficult to justify the cost-benefit of mandating more accurate location techniques solely for emergency call purposes;
- market forces and the industry should determine when and how location techniques are introduced in Australia;
- regulatory efforts should focus on ensuring necessary preparations are made to enable the emergency call service and ESOs to exploit more accurate MOLI once it becomes available commercially; and
- the protection of personal privacy over the use of customer location data for commercial services presents a significant issue for the future.

While it is expected that the first location-based services may emerge later in 2006, consumer access to those services will not become widespread until older handsets are replaced by the new GPS-assisted handsets.

ACMA continues to monitor the commercial introduction of location-based services, the development of MOLI technology and international regulatory responses in consultation with its Emergency Services Advisory Committee (ESAC).

#### *Proposal to block SIMless GSM calls to emergency services*

The ESAC informed the ACA that calls from GSM mobile phones from which the subscriber identity module (SIM) card has been removed are a significant source of non-genuine and hoax calls to the emergency call services. The ESAC proposal to block all such 'SIMless calls' before they are handled by the emergency call person was rejected by the ACA because the data supplied by ESAC members did not clearly indicate that the benefits in blocking calls justified the potential risks in blocking access.

The ESAC data revealed that there were a number of indeterminate, possibly genuine calls from SIMless phones in one state in one week. In view of the potential number of genuine calls from SIMless phones across all states and territories in a full year, the ACA adopted a cautious position in response to the proposal. In doing so, the ACA considered the objectives of the Telecommunications Act, including the objective of ensuring that appropriate consumer safeguards are provided. The ACA continued to work with ESAC members to develop the proposal for ACMA consideration in 2005–06.

## PROVISION OF ASSISTANCE TO LAW ENFORCEMENT AND NATIONAL SECURITY AGENCIES

Under subsection 105(5A) of the *Telecommunications Act 1997* the ACA must report on the operation of Parts 14 and 15 of this Act, and the costs of compliance with the requirements of those parts. Parts 14 and 15 principally deal with the need for carriers and CSPs to cooperate with law enforcement and national security agencies on matters of national interest.

### Obligations of carriers and carriage service providers

Carriers and CSPs have a statutory obligation to provide law enforcement and national security agencies with such help as is reasonably necessary for:

- enforcing the criminal law;
- enforcing laws that impose a pecuniary penalty;
- protecting the public revenue; or
- safeguarding national security.

In 2004–05, the Attorney-General’s Department referred a small number of carriers and CSPs to ACMA for refusing to provide assistance as required by section 313 of the *Telecommunications Act*. All such instances were resolved through informal discussions and negotiations between the carrier or CSP, the ACA and the Attorney-General’s Department. Formal enforcement action was not necessary.

### Interception capabilities

Under the *Telecommunications Act*, all carriage services must have the ability to be intercepted in accordance with a warrant issued under the *Telecommunications (Interception) Act 1979*. This includes obligations on carriers and CSPs to develop, install and maintain interception and agency-specific delivery capabilities.

Exemptions from interception obligations may be granted in certain circumstances by the Agency Co-ordinator (a position within the Attorney-General’s Department) or, for a carriage service under trial, by ACMA. The ACA granted no such exemptions during 2004–05.

During 2004–05, the ACA continued to work with the Agency Co-ordinator to identify instances of industry non-compliance with its legislated responsibilities relating to interception, placing a renewed emphasis on monitoring carriers and CSPs to ensure these requirements are fulfilled.

The cost to industry of the development, installation and maintenance of interception capabilities during 2004–05 was approximately \$6.6 million, down from \$7.2 million in 2003–04, reflecting the costs of purchasing and licensing interception software and hardware, personnel and other associated administrative costs. Industry reports indicate that agencies met approximately \$2.4 million of these costs.

Carriers and those CSPs nominated by the Attorney-General are also obliged to submit an annual interception capability plan (IC Plan) to both the Agency Co-ordinator and ACMA each year. During 2004–05, for the first time, a CSP was nominated by the Attorney-General and required to submit an IC Plan. Following the passage of the *Communications Legislation Amendment Act (No. 1) 2004*, carriers and nominated CSPs are required to lodge their annual IC Plan by 1 July instead of 1 January.

The Agency Co-ordinator assesses each IC Plan and may request that the carrier or nominated CSP make certain amendments. If the carrier or nominated CSP does not accept an amendment requested by the Agency Co-ordinator, the matter must be referred to ACMA for resolution. No matters were referred to ACMA for resolution during 2004–05.

During 2004–05, a number of carriers failed to lodge an IC Plan by the legislative deadline. This resulted in ACMA contacting 17 carriers seeking compliance and issuing three formal warnings. ACMA will closely monitor the submission of IC Plans in 2005–06 and engage in compliance activities with any carrier or nominated CSP that failed to lodge an IC Plan by 1 July 2005.

## INTEGRATED PUBLIC NUMBER DATABASE

### IPND overview

The Integrated Public Number Database (IPND) is an industry-wide database of all listed and unlisted public telephone numbers. It was established in 1998 and is managed by Telstra under a condition of its carrier licence. In addition to telephone numbers, the IPND contains associated customer data such as the customer's name and address and the name of the service provider providing the carriage service.

The Telecommunications Act requires CSPs to provide specified data to the IPND Manager. This data may only be accessed and used for the approved purposes specified in clause 10(1) of Telstra's carrier licence. Approved purposes include the operation of the emergency call service, assisting law enforcement agencies, safeguarding national security and publishing public number directories.

Telstra, as the IPND Manager, is responsible for maintaining the IPND and its integrity, receiving data from data providers and providing data to registered data users. In a multi-carrier environment, the IPND has many benefits, including:

- the availability of comprehensive location information for emergency service organisations in providing essential emergency services;
- the availability of comprehensive public number customer data for law enforcement and national security agencies; and
- the possibility of increased choice in public number directories.

The *Industry Code ACIF C555:2002 Integrated Public Number Database (IPND) Data Provider, Data User and IPND Manager* (the IPND Code) expands on the provisions set out in the primary legislation and subordinate instruments. The IPND Code sets out the rights and obligations of data providers, data users and the IPND Manager regarding the use, input, disclosure and storage of customer data in the IPND. The IPND Code is currently under review by ACIF (see Chapter 7).

At 30 June 2005, the IPND contained 43,585,833 connected records, an increase of 3,860,719 (or 9.7 per cent) over the last 12 months. There were 24 IPND data providers at 30 June 2005, compared with 19 at 30 June 2004. A data provider is a CSP who has the obligation to provide public number customer data to the IPND, or an entity acting on behalf of the CSP (provisions for which are outlined in the IPND Code), and who is registered with the IPND Manager.

The increase in data providers over the last 12 months was due partly to new market entrants and partly to existing CSPs becoming registered data providers and submitting their data to the IPND themselves. In addition to emergency service organisations and law enforcement agencies, there were seven authorised data users—two for the purpose of providing location-dependent carriage services and five for the purpose of publishing public number directories.

### Audits of the accuracy of the IPND

In May 2004, the ACA contracted Gibson Quai–AAS, in partnership with Data Analysis Australia, to conduct annual audits of the accuracy of address information of all IPND records for three years. Two of the three planned audits have been completed.



Several initiatives were undertaken by industry as an outcome of the 2004 audit findings. In particular, the ACIF IPND Data Working Group finalised the document *G619:2005 IPND Data Industry Guideline* in February 2005. This guideline assists in the provision of accurate data to the IPND by standardising the way in which IPND fields are populated and emphasising the importance of providing accurate and correctly formatted data to the IPND.

The working group also made recommendations to the IPND Code review working committee to enhance data accuracy provisions. Another initiative has been the recent implementation by the IPND Manager of validation procedures for the locality, state and postcode fields.

The results of the 2004 IPND audit were provided to each data provider, with each provider asked to rectify errors and undertake system or process improvements if necessary. While responses were generally positive, providers making significant system changes advised it was unlikely that changes would be implemented before the 2005 audit.

In order to measure any change in the accuracy of the IPND, another audit of the accuracy of address information was conducted by Gibson Quai using the same methodology as in 2004. All records, at April 2005, were audited using the Geo-coded National Address File (G-NAF) as the referential database, in accordance with industry agreement reached in the 2004 audit process.

A scoring system is used to measure the accuracy of the IPND address data. In Table 10.6, the address-matching scores have been grouped into four categories for ease of presentation. A high score (300 or more) indicates a highly accurate match to G-NAF using relatively full address details (such as street number, street name, street name type, locality, state and postcode). A very poor score (less than 100) indicates an inaccurate address, perhaps where a match could only be made at the suburb level.

Table 10.6 shows that in 2005 the overall service accuracy was found to have highly accurate, high or good useability for 91.5 per cent of IPND records. This is an improvement of 1.8 per cent for all services on the 2004 result. The primary improvement has been a shift from the ‘reasonable useability’ category to the ‘high or good useability’ category.

Table 10.6: IPND audit test results, 2004 and 2005

Service address complete address match to G-NAF (matching score)	All services %		Fixed services %		Mobile services %	
	2004	2005	2004	2005	2004	2005
Highly accurate ( $\geq 300$ )	60.2	59.1	79.6	79.3	34.7	35.2
High or good useability (200–299)	29.5	32.4	15.0	17.5	48.7	50.0
Reasonable useability (100–199)	9.6	7.9	5.0	3.0	15.7	13.7
Very poor useability or unusable ( $< 100$ )	0.6	0.6	0.4	0.2	0.9	1.1

Only a small improvement was anticipated in the 2005 audit results from the previous year, given that the substantial changes to data providers’ systems and processes arising from the 2004 audit were largely not implemented before the 2005 audit.

A key finding of the 2005 audit is that, with the exception of data forwarded by new data providers, few new errors such as misspellings, invalid characters and translation errors (which occur as a result of non-alignment of the data formats used between the data providers’ systems and the IPND) are being forwarded to the IPND. However, historical errors still remain, and these will be the focus of provider improvements before the 2006 audit.

## DISCLOSURE OF CUSTOMER INFORMATION

The confidentiality of communications carried by a carrier or a CSP, and the personal affairs and particulars of customers, is protected by Part 13 of the *Telecommunications Act 1997*. Entities—carriers, CSPs, the IPND Manager and emergency call persons—that come into possession of such information in the performance of their duties under the Telecommunications Act, must not disclose or use that information except in certain, limited circumstances. Those circumstances are very restricted and generally relate to:

- assisting in investigations conducted by law enforcement or national security agencies, ACMA, the ACCC or the TIO;
- addressing a threat to a person's life or health; or
- satisfying the business needs of other carriers and CSPs.

To monitor the balance between privacy and the provision of assistance to authorised agencies, all carriers and CSPs are required to report annually on the quantity and type of disclosures made under Part 13 of the Telecommunications Act. The aggregated totals of these for 2003–04 and 2004–05 are shown in Table 10.7. The Federal Privacy Commissioner is responsible for monitoring industry compliance with the record-keeping requirements associated with any disclosures.

Table 10.7: Disclosures made under Part 13 of the *Telecommunications Act 1997*, 2003–04 and 2004–05

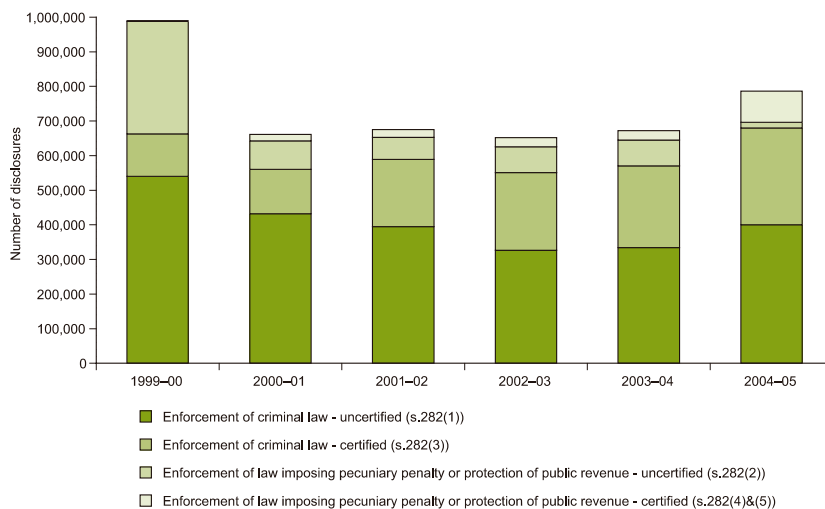
Reason for disclosure	Section of <i>Telecommunications Act 1997</i>	Number of disclosures		
		2003–04	2004–05	% change
Authorised by or under law	Section 280	3,745	13,336	256%
Made as a witness under summons	Section 281	70	80	14%
For the enforcement of the criminal law – not certified	Subsection 282(1)	333,927	400,100	20%
For the enforcement of a law imposing a pecuniary penalty or protection of the public revenue – not certified	Subsection 282(2)	74,102	15,654	–79%
For the enforcement of the criminal law – certified	Subsection 282(3)	236,546	280,062	18%
For the enforcement of a law imposing a pecuniary penalty – certified	Subsection 282(4)	5,380	1,776	–67%
To protect public revenue – certified	Subsection 282(5)	22,367	88,799	297%
To assist the ACA/ACMA	Subsection 284(1)	3	13	333%
To assist the ACCC	Subsection 284(2)	18	191	961%
To assist the TIO	Subsection 284(3)	9,483	5,927	–37%
To avert a threat to a person's life or health	Section 287	2,628	4,104	56%
Communications for maritime purposes	Section 288	0	0	0%
With the knowledge or consent of the person concerned	Section 289	12,280	75,422	514%
In circumstances prescribed in the <i>Telecommunications Regulations 2001</i>	Section 292	317	2	–99%
Its use is connected with an exempt disclosure	Section 293	5	0	–100%
Total		700,871	885,466	26%

The number of disclosures in 2004–05 (885,466) was approximately 185,000 (26 per cent) more than the previous reporting year. With a few notable exceptions, disclosures in most categories rose significantly, particularly disclosures for the purpose of criminal law enforcement and the protection of public revenue. Telstra made 78.5 per cent of the total disclosures, with 6.7 per cent by Virgin Mobile, 6.0 per cent by Vodafone and 5.6 per cent by Optus. Telstra makes more disclosures than the other carriers because of its role as the IPND Manager.

Under section 282 of the Telecommunications Act, government agencies may provide a certificate to a carrier or CSP that a disclosure is reasonably necessary for the purpose of enforcing the criminal law or a law imposing a pecuniary penalty, or for protecting the public revenue.

The extended deployment of the IPND enquiry system, which largely automates the certification process for government agencies, is associated with a shift towards certified disclosures in 2004–05. Figure 10.3 shows that, of the 786,391 section 282 disclosures in 2004–05, 53 per cent were uncertified, down from 61 per cent in 2003–04.

Figure 10.3: Disclosures of customer information under section 282 of the *Telecommunications Act 1997*, 1999–00 to 2004–05



Disclosures for the enforcement of a law imposing a pecuniary penalty or the protection of public revenue (subsections 282(2), (4) and (5)) increased slightly from 101,849 in 2003–04 to 106,229 in 2004–05.

A fourfold rise in the number of disclosures made under subsection 282(5) is balanced by a fall in disclosures under both subsections 282(2) and (4). This inverse relationship may in part be due to Telstra implementing changes in the way disclosures are classified.

Disclosures authorised by or under law (section 280) rose significantly in 2004–05 to 13,336 from 3,745 in 2003–04. Similarly, disclosures to assist the ACA and the ACCC (subsections 284(1) and (2) respectively) greatly increased in 2004–05, but with low volumes.

The number of disclosures made with the knowledge or consent of the person concerned (section 289) rose sharply in 2004–05, increasing from 12,280 in 2003–04 to 75,422 disclosures in 2004–05. Much of this growth can be attributed to the substantial number of disclosures to external parties to conduct credit checks undertaken by Virgin Mobile during 2004–05, rising by over 54,000 from the previous year.

Conversely, the number of disclosures in circumstances prescribed in the *Telecommunications Regulations 2001* (section 292) decreased from 317 in 2003–04 to two in 2004–05, primarily because the number of Optus disclosures were down from 250 in 2003–04 to none in the following year.

## INSTALLATION OF TELECOMMUNICATIONS FACILITIES – CARRIER RIGHTS AND OBLIGATIONS

In order to provide competitive services and to expand the coverage of their networks, carriers continued to deploy mobile telecommunications and cable networks during 2004–05. The installation of telecommunications infrastructure continued to generate some consumer concerns during the year.

Most concerns related to the entitlement of carriers to install facilities—including facilities defined to be ‘low-impact facilities’ by the *Telecommunications (Low-impact Facilities) Determination 1997*—and the rights of landowners, occupants and residents to object. In addition to the visual effect of installations, community attention has also focused on the possible health effects of electromagnetic radiation (EMR).

Installations of telecommunications facilities are generally subject to approval by local councils under state and territory planning legislation, unless a carrier is installing a low-impact facility. The Low-impact Facilities Determination specifies facilities that a carrier has a right to install, which are subject to restrictions on size, colour and location. These facilities include radio, satellite, underground cable, public payphone, emergency and co-located facilities installed on or within another facility or structure.

Carriers must comply with the Ministerial *Telecommunications Code of Practice 1997* when exercising powers to inspect land and maintain and install telecommunications facilities. If a carrier engages in a low-impact facility activity in relation to any land, the carrier must take all reasonable steps to ensure that the land is restored to a condition similar to its condition before the activity began. Other requirements also include limiting noise and co-locating facilities with other carriers where possible.

ACMA can investigate complaints about carrier non-compliance with the Telecommunications Act, the Telecommunications Code of Practice or a registered industry code. ACMA can warn or direct a carrier about how to comply with its obligations under the Telecommunications Act and its legislative instruments and carriers who fail to comply with an ACMA direction can be financially penalised.

ACMA does not have the power to determine whether a particular facility is low-impact or to direct a carrier to co-locate a facility. Binding determinations as to whether a facility is low-impact are made by courts, typically in response to proceedings commenced by state, territory and local governments.

### Investigation of complaints

ACMA’s role in the installation of telecommunications facilities is to investigate breaches of the Telecommunications Act, the Telecommunications Code of Practice and industry codes registered by ACMA. ACMA also provides information to assist landowners, the community and industry to understand the rights and obligations of carriers where powers are exercised under Schedule 3 of the Telecommunications Act.

Carriers are required to notify landowners and occupiers before installing a communications facility to give them the opportunity to object. The TIO assists in the resolution of unresolved objections. In 2004–05, the TIO received 498 land access complaints, an increase of six per cent from 2003–04. The majority of complaints related to damage to property by carriers and damage to cables and equipment by landowners. There were 47 complaints relating to the failure of a carrier to give notice to the landowner or occupier, down 19 per cent from 2003–04.

Under the Telecommunications Code of Practice, an owner or occupier of land may object to a carrier in the first instance about the installation of a low-impact facility. If the objection is not resolved between the carrier and the objector, the objector may request that it be referred to the TIO. The TIO has the power to give directions to the carrier about what the carrier should do before installing the low-impact facility. During the reporting period, five objections were referred to the TIO and the TIO issued two directions to carriers about those objections.

During 2004–05, the ACA received nine complaints and 82 enquiries about the installation of low-impact facilities. Enquiries were received from solicitors, local councils, landowners, telecommunications carriers and the public about matters covered by Schedule 3. Many enquiries related to the entitlement of carriers to install facilities, including radiocommunications facilities, and the rights of the landowner, occupants and residents to object. In all cases, enquiries were resolved after information was provided to the enquirer.

## Regulation of electromagnetic radiation

Community concerns about the possible adverse health effects associated with the use of radiocommunications devices were taken into account in developing regulatory arrangements to limit EMR. The EMR regulatory arrangements apply to mobile phones, mobile telecommunications towers and other installations using radiocommunications. The arrangements comprise technical limits for human exposure to EMR and an industry code covering the steps carriers must take when designing, siting and operating mobile telecommunications base stations.

The EMR limits for such facilities are set out in a standard developed and published in 2002 by the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA), which were made mandatory in 2003 by the ACA. This standard is based on international scientific research in this field and incorporates EMR limits that are well below the level at which health effects are known to occur. The standard is based on exposure limits rather than emission limits, which means public exposure to transmitters is a key issue in determining compliance.

Under the EMR regulatory arrangements telecommunications towers must comply with the human health exposure limits set out in the ARPANSA standard and, in certain cases, carriers are required to hold records demonstrating compliance.

EMR regulation also applies to all radiocommunications devices with integral antennas, which are covered by the *Radiocommunications (Electromagnetic Radiation–Human Exposure) Standard 2003* and the *Radiocommunications (Compliance Labelling–Electromagnetic Radiation) Notice 2003*.

The regulatory arrangements include radiofrequency EMR human exposure limits, a mandatory test method and labelling requirements. The ACA continued its random audit program in 2004–05 to ensure telecommunications facilities and suppliers of telecommunications mobile and portable equipment comply with the regulatory requirements. Under the *Radiocommunications Act 1992*, suppliers incur penalties of up to \$165,000 for supplying a non-standard device.

During this reporting period, no EMR compliance issues were found for telecommunications installations or suppliers of telecommunications customer service equipment such as mobile and cordless phones.

## Industry responses to community concerns

### *Deployment of Mobile Phone Network Infrastructure Code*

The *Industry Code ACIF C564:2004 Deployment of Mobile Phone Network Infrastructure* supplements legislation by requiring carriers to consult with the local community and adopt a precautionary approach in the planning, installation and operation of radiocommunications infrastructure. The code was revised during 2004 and registered in April 2005. More information about the code's development and code compliance issues is in Chapter 7: Self-regulation – industry codes and technical standards.

As a result of community feedback, carriers now include in their notification letters to members of the community a paragraph giving ACMA as a source of information about EMR and the code, including online information at <http://emr.acma.gov.au>.

### *Industry initiatives*

During 2004–05, the mobile telecommunications industry responded to criticisms about deployment of telecommunications infrastructure. The Mobile Carriers' Forum (MCF) is an industry body constituted of the four Australian mobile phone service carriers—Hutchison, Optus, Telstra and Vodafone—and has introduced initiatives to increase public understanding of issues surrounding the installation of mobile phone towers. The MCF deals with social and environmental issues associated with the deployment and operation of mobile telecommunications networks.

Among the initiatives developed by MCF during 2004–05 were:

- the publication of *Third Generation Mobile Networks in Australia – Broadband for your Mobile Phone*, an information booklet outlining the practical applications and benefits of 3G mobile services to the community and business sectors in Australia; and
- distribution of an information kit on mobile phone deployment to all local government authorities, as well as Commonwealth and state government elected representatives, to provide information about regulating the installation of communications facilities, including the measures and standards to be met by those facilities.

The MCF also launched the ACIF Code Guidelines for Local Government project, which was delivered through workshops held across Australia in May 2005. This project aims to assist local government to understand, respond and participate in the ACIF code process; streamline local government's involvement and workload in carrier siting processes; and improve working relationships between local government and carriers by adopting a partnership approach to telecommunications deployment.

In addition, the mobile phone network operators announced an intention to launch 3G network services using shared sites and infrastructure (see Chapter 5: Mobile telecommunications services).

### *Government-industry collaboration*

In December 2004, a national community-based alliance, Tower Sanity Alliance (TSA), publicly called for changes to government policy and legislation concerning the deployment of mobile phone towers. TSA presented the Minister with a 'white paper' requesting significant changes to existing law, including the abolition of carrier powers and immunities specified under Schedule 3 of the Telecommunications Act.

Although marginally outside the reporting period, a meeting was held in July 2005 between the TSA, ACMA, DCITA, ARPANSA, ACIF and the MCF, with the Minister subsequently announcing a package of initiatives to improve processes for the deployment of mobile phone infrastructure. These initiatives, which were agreed by the MCF, include:

- an independent audit of base stations so that the community can be assured they are operating within international safety limits;
- agreement by the MCF (in line with current practice)
  - not to place base stations on a single residential dwelling that is a stand-alone building, a semi-detached house or a townhouse or terrace house without the consent of the land owner;
  - to always attempt to find an alternative site that provides substantially the same or better network coverage before asking for consent; and
- agreement by the government to extend this protocol beyond the MCF members to all wireless carriers.

To improve communication with residents when proposing to install base stations, the MCF has also agreed to:

- produce a document that explains how mobile phone base station sites are selected and demonstrates how a precautionary approach is taken—such as, how base stations are designed to operate at the lowest levels necessary;
- review and improve training for contractor and carrier staff and to ensure they follow all consultation procedures as outlined in the Deployment of Mobile Phone Network Infrastructure Code;
- ensure each carrier has a single contact point capable of and responsible for dealing with complex enquiries from the community;
- produce a quarterly electronic newsletter for local government authorities and others about communications facility deployment, which will advise and update the latest research and policies; and
- establish a Design and Innovation Taskforce to assess the latest international design options and how they can be applied to improve the look of new base stations in Australia, and provide its assessment to local government and community groups for comment.

# chapter 11

## CHAPTER 11: FACILITATING COMPETITION

Key developments	193
Allocation of numbers	194
<i>Mobile numbers</i>	194
<i>Geographic numbers</i>	194
<i>Carriage service provider identification codes</i>	196
<i>Data network access service numbers</i>	196
<i>Other numbers</i>	197
Domain name administration	197
<i>Managing domain administration complaints</i>	197
<i>Dispute resolution policy</i>	197
<i>New 2LDs</i>	198
Number portability	198
<i>Local number portability</i>	198
<i>Mobile number portability</i>	199
<i>Freephone and local rate number portability</i>	199
Numbering for new telecommunications services	200
<i>Trial of 188 numbers</i>	200
<i>Trial numbers</i>	200
Applications from industry for new standard zone units	200
Voice over internet protocol services	201
<b>smart</b> numbers®	201
<i>Benefits to industry and consumers</i>	201
<i>Auction statistics and highlights</i>	202
<i>International comparisons</i>	202
<i>Industry developments</i>	202
ENUM	203



## CHAPTER 11: FACILITATING COMPETITION

This chapter provides an overview of the trends in administrative processes which facilitate competition in the operation of the telecommunications market, including the:

- allocation of numbers to service providers;
- allocation of domain names for internet websites;
- porting of numbers;
- numbering for new telecommunications services;
- numbering for services using the voice over internet protocol (VoIP); and
- web-based public auction of numbers.

The chapter also reports on the trial of the electronic number mapping (ENUM) protocol.

### KEY DEVELOPMENTS

- The expansion of 3G networks and increasing diversity of services provided on mobile networks pushed demand for mobile numbers to more than double the total allocation for 2003–04.
- The allocation of geographic numbers increased significantly through making provision for numbers to support VoIP services. The demand for geographic numbers was more than 14 times the average annual demand over the last three years.
- Local number ports increased by 73 per cent to 579,537.
- Mobile number ports increased by 15 per cent to 1,284,715.
- Since the ACMA **smartnumbers**<sup>®</sup> auction system for specified freephone and local rate numbers began in August 2004, 10,339 **smartnumbers**<sup>®</sup> have been allocated through public auctions, with revenue exceeding \$18 million.
- An ENUM trial began in June 2005 and will run for a minimum of 12 months.

## ALLOCATION OF NUMBERS

### Mobile numbers

Mobile services using GSM, CDMA and 3G technologies are provided using 10-digit numbers starting with 04. Demand for mobile numbers increased in 2004–05 to more than double the total allocation of 2003–04 (see Table 11.1). The increase largely resulted from the expansion of 3G networks in major metro and regional centres and the increasing diversity of services provided on mobile networks by multiple carriers.

Table 11.1: Demand for mobile numbers ('000s), 2001–02 to 2004–05

Mobile numbers	2001–02	2002–03	2003–04	2004–05
Allocated	500	3,300	2,420	6,500
Surrendered	500	400		1,000
Net increase		2,900	2,420	5,500
Cumulative total allocated	26,700	29,600	32,020	37,520

### Geographic numbers

Geographic numbers are used to provide access to local telephone services and related voicemail services, facsimile services, internet dial-up services and termination numbers for freephone and local rate services.

Total allocations of geographic numbers increased significantly in 2004–05 compared with the previous three years (see Table 11.2). The principal reason for the increase was to make provision for the supply of local telephone services using VoIP services.

Service providers wishing to offer VoIP services nationally required numbers in every geographical area of Australia. Several applicants sought 1,000 numbers in every charging zone in Australia. With over 2,000 zones across the country, the majority located in non-metropolitan areas, these applications gave rise to some allocations of more than two million numbers. During 2005, the minimum unit size for certain regional areas was reduced to 100 numbers because of a temporary shortage of number supplies. To conserve numbering resources, service providers began requesting numbers within these regional areas in blocks of 100 numbers per zone.

Table 11.2: Demand for geographic numbers ('000s), 2001–02 to 2004–05

Geographic numbers	2001–02		2002–03		2003–04		2004–05	
	Metro	Non-metro	Metro	Non-metro	Metro	Non-metro	Metro	Non-metro
Allocated	622	154	710	77	473	191	1,968	8,788
Surrendered	150	119	100		61	26	321	2,744
Net increase	472	35	610	77	412	165	1,647	6,044
Cumulative total allocated	33,843	33,413	34,453	33,490	34,865	33,655	36,512	39,699

During 2004–05, the ACA allocated geographic numbers to nine CSPs to make provision for the supply of local telephone services using VoIP technology. The demand was more than 14 times the average annual demand for geographic numbers over the previous three years. However, most of the CSPs have not provided VoIP services to the market during 2004–05 (see Table 11.3).

Larger providers generally applied to the ACA for allocations of numbers for use with these local telephone services, while smaller providers relied on other providers to issue numbers to them as part of the establishment of access arrangements.

Optus requested numbers in every zone in which it currently does not hold numbers for the future provision of local telephone services.

Table 11.3: Geographic numbers allocated ('000s), 2001–02 to 2004–05

CSP	2001–02		2002–03		2003–04		2004–05	
	Metro	Non-metro	Metro	Non-metro	Metro	Non-metro	Metro	Non-metro
AAPT	10				10			10
Adam Internet							11	12
Agile							88	13
Optus	150	20	140	10	230	84	434	1,983
Chime							390	2,052
Clarinet							88	991
Engin							88	2,055
Hutchison	62	2						
IP Systems							7	
Macquarie Corporate							311	
PowerTel	100	13			22	1	32	2
Primus	110		350	15			190	832
Telecorp							208	755
Telstra	180	109	220	52	211	96	121	40
TransACT		10				10		30
Western Power	10							
YLESS4U								13
<b>Total</b>	<b>622</b>	<b>154</b>	<b>710</b>	<b>77</b>	<b>473</b>	<b>191</b>	<b>1,968</b>	<b>8,788</b>

As shown in Table 11.4, Macquarie Corporate Telecommunications surrendered its entire 2004–05 allocation of geographic numbers after it discontinued plans to launch a new service. Telstra surrendered a large quantity of excess numbers it held in non-metropolitan areas for numbering efficiency reasons.

Table 11.4: Geographic numbers surrendered ('000s), 2001–02 to 2004–05

CSP	2001–02		2002–03		2003–04		2004–05	
	Metro	Non-metro	Metro	Non-metro	Metro	Non-metro	Metro	Non-metro
Austar	50	79						
Macquarie Corporate Telecommunications							311	
NewTel					61	23		
Optus			100					
One.Tel	100							
PowerTel		20				3		
Telstra		20					10	2,744
Total	150	119	100		61	26	321	2,744

### Carriage service provider identification codes

Carriage service provider identification (CSPID) codes are four-digit numbers used by CSPs for pre-selection over-ride, interconnection and routing. During 2004–05, CSPID codes were allocated to Callplus Australia, Mobile Innovations, Clarinet and Macquarie Corporate Telecommunications (see Table 11.5). Macquarie later surrendered its CSPID code after it abandoned a business plan.

Table 11.5: Demand for CSPID codes, 2001–02 to 2004–05

CSPID codes	2001–02	2002–03	2003–04	2004–05
Allocated	2	3	1	4
Surrendered	11	5		2
Net increase	–9	–2	1	2
Cumulative total allocated	24	22	23	25

### Data network access service numbers

Data network access service (DNAS) numbers are used to allow end-users to access features and facilities on a data network, and include services such as Telstra's AUSTPAC data network, internet dial-up and SMS between mobile and internet users. DNAS numbers commence with 0198. Demand for DNAS numbers has reduced in the last two years (see Table 11.6) after an initial high demand for internet dial-up services, with only Telstra requesting an allocation in 2004–05 for use with video streaming services. This trend is likely to continue with the increasing take-up of broadband services.

Table 11.6: Demand for data network access service number ('000s), 2001–02 to 2004–05

Data network access service numbers	2001–02	2002–03	2003–04	2004–05
Allocated	27	32	1	10
Surrendered	1	1		
Net increase	26	31	1	10
Cumulative total allocated	37	68	69	79

## Other numbers

Fujitsu surrendered one million data network service numbers in 2004–05 which are used with older low speed, highly secure, data networks by Telstra and the Department of Defence. These 14-digit numbers commence with 505.

Telstra was allocated 10,000 premium rate numbers in 2004–05 for use with video streaming services. These numbers commence with 1902.

## DOMAIN NAME ADMINISTRATION

The Australian Government endorsed au Domain Administration Ltd (auDA), a non-profit organisation, in December 2000 as the body to administer the .au internet domain name space.

At 30 June 2005, there were 21 auDA accredited registrars and 1,732 notified resellers. During 2004–05, the number of registered domain names in the five open second level domains (2LDs) of .com.au, .org.au, .asn.au and .id.au increased from 443,128 to 551,291. The .com.au 2LD remains the most popular domain, with 477,376 registered at 30 June 2005.

### Managing domain administration complaints

Most complaints regarding domain administration concern basic service provision issues such as difficulty retrieving domain name passwords or updating registrant contact information. In line with industry self-regulatory principles, most of these complaints can be resolved between the aggrieved party and the registrar or reseller without the need for a third party to mediate or make determinations. Where complaints are more complex however, they can be referred to auDA for a determination.

During 2004–05, auDA handled 56 formal complaints regarding the conduct of a reseller or registrar. This was an increase of 22 from the 34 complaints handled by auDA in 2003–04.

The most noteworthy of these complaints involved an accredited registrar, TPP Internet, breaching the *au Domain Name Suppliers' Code of Practice (2004–05)* by providing misleading or inaccurate renewal notices to a number of its customers.

In January 2005, auDA responded to a number of complaints about the activities of two organisations, Domains Australian Pty Ltd, and the Federal Bureau of Domain Names by issuing consumer alerts. These operators were, according to auDA, attempting to scare or otherwise mislead consumers into registering .au domain names at inflated prices.

### Dispute resolution policy

In 2002, the auDA developed a dispute resolution policy (auDRP) to expedite the process of dealing with complaints referred to auDA. Based largely on the global Uniform Dispute Resolution Policy developed by ICANN, the international coordinator of top level domains, the policy seeks to put in place a process to resolve situations where two or more parties seek the rights to a particular Australian open 2LD.

The policy applies only to 2LDs issued or renewed after 1 August 2002, although owners of previously registered domains may apply to have disputes heard under this policy as a cheaper, speedier alternative to litigation.

In 2004–05, 20 proceedings were lodged under the auDRP compared with 11 proceedings lodged in the previous year.

## New 2LDs

auDA announced in November 2002 that it would create eight new 2LDs for Australian states and territories for community use, for example, vic.au. Further to this, it was decided in November 2004 that for the first time, geographic domain names would be made available. Under auDA policy a 'geographic name' is defined as any location with an Australian postcode, as listed on the Australia Post postcode database.

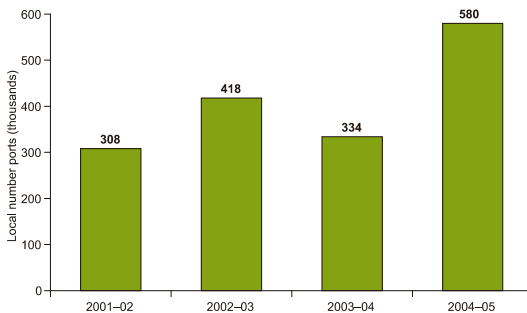
The initial stages of this process involved a ballot to distribute geographic names to commercial parties. The results of the ballot are expected to be finalised in late 2005. Monies raised from this commercial ballot will be used to fund the implementation of community geographic names. Use of these names will be restricted to community website portals that reflect community interests, such as local business, tourism, historical information, special interest groups and cultural events.

## NUMBER PORTABILITY

Number portability contributes to competition in the provision of telecommunications services by allowing consumers to change their telephone company without the need to change their telephone number. The ACCC determines the services for which number portability is required by assessing whether it is 'in the long-term interest of end-users'. Once the ACCC has made this determination, ACMA takes action to implement the decision.

To date, number portability has been implemented for local, freephone and local rate, and mobile numbers. Premium rate services have been declared as portable, but an implementation date has not yet been set by ACMA.

Figure 11.1: Volume of local number ports, 2001–02 to 2004–05



Source: AAPT, MCI, Optus, PowerTel, Primus, Telstra, TransACT and Primus

### Local number portability

Local number portability (LNP) refers to the porting of eight-digit geographic numbers and is only available to customers where there are alternative access providers competing with Telstra.

One exemption from LNP remains in force. An exemption was granted to Neighborhood Cable from complying with the LNP requirements on 22 October 2003. The exemption is due to expire on 22 October 2005.

#### Local number portability activity

During 2004–05, the total number of local numbers ported was 579,537, an average of 48,295 per month (see Figure 11.1). This represents a 73 per cent increase from the 334,123 local numbers ported in 2003–04, an average of 27,844 ports per month.

## 11

The increase in the volume of local number ports appears to have arisen from an increased take-up of 'bundled' CSP service offerings, for example, offers that provide discounts if a customer receives their mobile, fixed and internet services from one provider. To take advantage of these offers, customers may need to change their service provider for their fixed service.

The TIO did not receive any systemic complaints about LNP in 2004–05.

#### Complex local number ports

A 'complex' local number port involves more than one number and access line and requires some degree of manual processing and project management, rather than the automated process used for most simple ports.

During 2004–05, about 90 per cent of ported local numbers were complex ports. In comparison, about 85 per cent of ported local numbers were complex ports during 2003–04.

The key service metrics for ports associated with a complex telephone service are defined in the *Industry Code ACIF C540:1999 Local Number Portability* code. The ACA was unable to confidently estimate the time taken to complete these ports as information received during this reporting period was presented in an inconsistent manner. ACMA will correct this issue through modification of the data request to industry participants in the next reporting period.

## Mobile number portability

Mobile number portability (MNP) enables customers to change their mobile phone service provider while retaining their mobile number.

The industry provides near real-time MNP porting processes, which are supported by performance measures. The CSP gaining a port is required to complete 90 per cent of ports within three business hours of operation and 99 per cent of ports within two days of a request to port being made to that CSP.

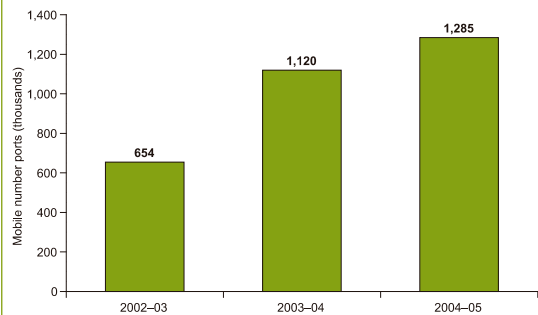
The performance of industry against this and other enforceable measures contained in the *Industry Code ACIF C570:2003 Mobile Number Portability* is discussed further in Chapter 7: Self-regulation – industry codes and technical standards.

### Mobile number portability activity

There were 1,284,715 mobile number ports during 2004–05, an increase of 15 per cent on the 1,120,338 ports in 2003–04 (see Figure 11.2). Of those, 1,232,406 were inter-network ports and 52,309 were intra-network ports. Intra-network ports include ports occurring in the same network between different service providers, for example, between resellers on the same network.

Optus advised that its porting figures for the month of September 2004 were not available at the time of reporting. Consequently, the 2004–05 figure does not represent the total porting activity for the year.

Figure 11.2: Volume of mobile number ports, 2002–03 to 2004–05



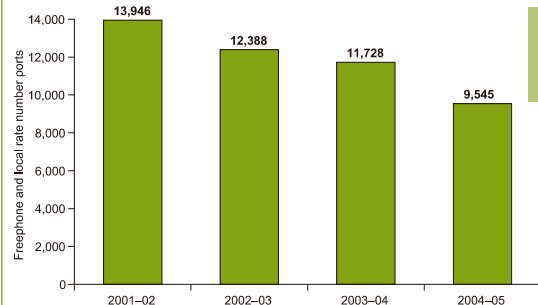
Source: Mobile carriers

## Freephone and local rate number portability

There were 9,545 freephone and local rate numbers ported during 2004–05, an 18 per cent decrease from the 11,728 ports in 2003–04 (see Figure 11.3).

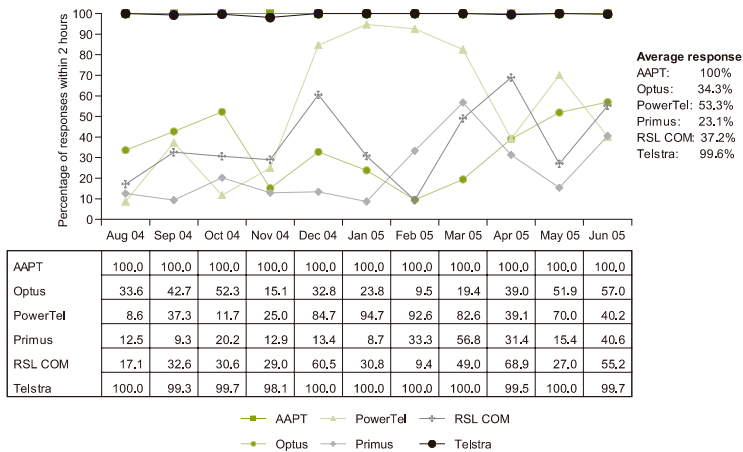
For the first time this year, ACMA is including data on the time it takes Industry Number Management Services Ltd (INMS) subscribers to respond to porting messages. INMS requires its subscribers to respond to 95 per cent of porting messages within two hours. INMS recorded subscriber performance as shown in Figure 11.4.

Figure 11.3: Volume of freephone and local rate number ports, 2001–02 to 2004–05



Source: Integrated Number Management Services Ltd

Figure 11.4: INMS subscriber port response times, August 2004 to June 2005



Note: The INMS system does not take into account public holidays or planned outages when measuring response times.

## NUMBERING FOR NEW TELECOMMUNICATIONS SERVICES

### Trial of 188 numbers

The ACA received submissions from industry indicating that a small number of content providers and their customers would be adversely affected by the cessation of the 188 number trial. These numbers are used to trial premium rate SMS using seven-digit numbers commencing with 188.

Although the cessation date for the trial was revised twice and many services had been transferred to 19x numbers before 2004–05, service and content providers indicated that, for some 188 numbers, providers had purchased advertising up to May 2005 and relied on the continued availability of 188 numbers. In addition, some providers indicated plans to migrate a few services to 195 and 196 number ranges when the numbers could be used to supply services, once consumer protection arrangements were in place.

Based on the advice received, the cessation date for most 188 services was extended to 31 May 2005. However, services that would migrate to 195 or 196 numbers may continue to be provided on 188 numbers until new consumer protection arrangements are in effect. These arrangements are discussed in Chapter 5.

### Trial numbers

Industry expressed an interest in the availability of trial number ranges to streamline the process for trialling new services. The ACA received comments about the proposal from members of the Numbering Advisory Committee and ACMA is currently preparing a detailed proposal for comment by the committee. It is expected that this matter will be completed in 2005–06.

## 11

## APPLICATIONS FROM INDUSTRY FOR NEW STANDARD ZONE UNITS

In February 2005, the ACA received an application from Telstra under section 3.8A of the *Telecommunications Numbering Plan 1997* to create a new standard zone unit (SZU) called Nogoia in central Queensland. Telstra also applied to have numbers held by customers in that area excised from the Bingegang extended zone and transferred to the Nogoia SZU.

The creation of the Nogoia SZU will improve access to untimed local calls for residents. The application for Nogoia was approved in May 2005.



## VOICE OVER INTERNET PROTOCOL SERVICES

In December 2004, industry expressed its views about numbering for VoIP services in Australia in response to a discussion paper released by the ACA.

The option of using geographic numbers only for VoIP services gained some support from parties sympathetic to new entrants and associated industry providers. Support for a new number range only came from emergency services, law enforcement, privacy and consumer groups. Support for some combination of geographic numbers and a new number range was broadly based, coming from incumbents, new entrants, associated industry providers and some consumer groups. However, opinion was divided about the purpose of an additional number range and whether all or only some VoIP services should have access to geographic numbers.

The final arrangements for numbering VoIP services will be determined in the next reporting period.

In European Union (EU) countries and the United States of America, geographic numbers are allocated for use with VoIP services generally, as they are seen as promoting competition by minimising entry barriers to new entrants. In addition to geographic numbers, EU countries have provided a new number range for VoIP services because it may foster competition by stimulating the emergence of new services. Japan and Korea have also provided new number ranges.

A new number range allows for service differentiation in the market place, easy recognition of service capabilities by consumers and the opportunity to allocate numbers in smaller quantities, thus efficiently using resources.

### smartnumbers®

In July 2004, the ACA launched **smartnumbers**®, a web-based auction system for allocating freephone and local rate numbers (FLRNs)—numbers beginning with 13, 1300 or 1800. The **smartnumbers**® auction system was introduced to provide an efficient system of allocation and to ensure that an appropriate return is received for a limited resource. 1.8 million FLRNs were made available for auction.

The **smartnumbers**® number allocation system consists of two processes—public auctions and a separate process for income tax exempt charities. The charities auctions began on 21 July 2004 and the public auctions began on 18 August 2004. Auctions are currently scheduled fortnightly.

The reserve prices for numbers auctioned under the public auction process have been set by ACMA according to the characteristics of numbers and start at \$500 per number. Desirable **smartnumbers**®, including memorable numbers with numerical patterns or those that can be translated into phonewords, may have a higher reserve price. Charities are able to obtain one number of each type at a reserve price of \$100, providing that a strategic link can be demonstrated between the charity and the phoneword that a number represents.

During 2004–05, after public consultation, changes were made to relevant determinations under the Telecommunications Act for **smartnumbers**® to provide more equitable payment terms and ensure the prompt re-allocation of numbers subject to defaulted payments.

### Benefits to industry and consumers

The **smartnumbers**® web-based auction system allows multiple parties to bid for sought-after numbers. Interested parties can register to use the **smartnumbers**® website online and, once registered, they can then apply for and nominate numbers for auction. All interested parties, including individuals, have the same opportunity to acquire a number through the **smartnumbers**® system and interest in a particular number can be monitored online.

Businesses use FLRNs for inbound calls so that callers do not have to pay long distance call charges. Businesses may find **smartnumbers**<sup>®</sup> attractive as a marketing tool because they form a distinctive numerical pattern, for example, 1800 111 222, or translate into a phoneword using the standard alpha-numeric keypad. Businesses have found that the use of a phoneword increases call volumes significantly, compared with the use of a standard FLRN. For consumers, **smartnumbers**<sup>®</sup> are easy to remember. Calls to 1800 freephone numbers are free for the caller (from fixed telephones only), and calls to 13 or 1300 local rate numbers are charged to the caller at the applicable local call rate.

Successful bidders for **smartnumbers**<sup>®</sup> purchased through the auction system are entitled to enhanced rights of use (ROU) including the ability to trade or lease the ROU. ROUs of a **smartnumbers**<sup>®</sup> may be retained while having no active services in place for three years.

### Auction statistics and highlights

Since the **smartnumbers**<sup>®</sup> auctions commenced in August 2004, there has been significant interest from bidders in numbers that can be translated into attractive phonewords. The top 20 numbers according to the price paid at auction are all numbers that correspond to generic phonewords that are commercially attractive to businesses.

At 30 June 2005:

- 10,339 **smartnumbers**<sup>®</sup> had been allocated through public auctions;
- 165 **smartnumbers**<sup>®</sup> had been allocated to charities;
- the revenue from public auctions was \$18,253,002; and
- the revenue from charities auctions was \$75,269.

A highlight of the **smartnumbers**<sup>®</sup> auctions was the winning bid of more than \$1 million for the number 138 294, which could translate to the phoneword 13 TAXI. Other **smartnumbers**<sup>®</sup> that attracted significant interest from bidders were the numbers that could translate to phonewords such as TICKET, LIMO, TYRE, BLINDS, FINANCE and FLOWER.

### International comparisons

FLRNs are allocated in a variety of ways overseas. Examples of overseas allocation systems are:

- In the United States, FLRNs are held in a pool and then allocated to customers on a first come, first served basis. Numbers are not available for purchase and cannot be warehoused.
- In the United Kingdom, customers contact their preferred service provider who may offer them a particular number or range of numbers. If a customer wishes to acquire a number held by a different service provider, pre-allocation portability may be used to transfer the number to the customer's preferred provider.
- In New Zealand, numbers are allocated to a service provider who then has five working days to issue the number to a customer in conjunction with a service. Numbers which are not in service must be relinquished. No service provider is permitted to warehouse any toll free number.

## 11

### Industry developments

In 2004–05, the Australian Phone Word Association (APWA) was formed by major participants in the **smartnumbers**<sup>®</sup> auctions to represent their interests and act as a peak body for the phonewords industry. The objectives of APWA include providing a central point of contact for its members, furthering the interests of its members through the provision of information on industry reforms and developments, and liaising with relevant government agencies and other industry bodies. APWA is currently preparing to develop of an industry code of conduct for its members.

## ENUM

ENUM is a communications protocol developed by the Internet Engineering Taskforce that enables addresses for internet resources, such as addresses for VoIP, email, web pages, instant messaging, to be mapped to telephone numbers. ENUM does this by converting telephone numbers into internet domain names and storing them in the domain name system (DNS).

Once an ENUM domain name is stored in the DNS, an end-user can associate one or more other internet-based services with the number. With an appropriate application, a person can then use ENUM to discover internet-based communications addresses for services such as VoIP or email when only a single telephone number is known. One benefit of ENUM is the ability to provide a customer with a single point of contact for all of their communications services. Another is the ability to act as an enabler for VoIP calls. ENUM can be used to search for a cheaper VoIP connection first before a call is made to a telephone number.

Trials of ENUM have been conducted in several countries throughout Europe and Asia, including China, France, Ireland, the Netherlands, Poland, South Korea, Sweden, Switzerland and the United Kingdom. After an extensive trial phase, Austria launched the first commercial ENUM service in December 2004.

During 2004–05, an ENUM trial was established in Australia. In consultation with the Australian ENUM Discussion Group (AEDG), the ACA called for expressions of interest for a trial registry operator. The registry is the central database of authoritative information about all Australian ENUM domain names and is a pre-requisite for a trial to commence.

In March 2005, the ACA contracted the Melbourne-based company AusRegistry International to be the trial registry operator, and arranged with the International Telecommunication Union for the Australian ENUM domain of .1.6.e164.arpa to be delegated to AusRegistry International, a subsidiary company of AusRegistry, the current registry operator for all second-level domain names under the Australian .au suffix.

The Australian trial commenced on 6 June 2005 and will run for a minimum of 12 months, with the option of extension for a further 12 months. At the time of commencement, three organisations had signed on to the trial to act as ENUM registrars—Enetica and Instra (current .au domain name registrars) and AARNet (operators of Australia's academic and research network).

The Australian trial is a public trial of ENUM open to all interested organisations and individuals who wish to make use of the trial infrastructure provided by registrars and the registry to test and develop ENUM applications and services or to just experiment with ENUM. ACMA will continue to convene the AEDG during the trial to provide a forum for trial participants to raise issues and to report results. Based on the trial experience, ACMA will make a decision as to whether a commercial ENUM registry should be established at the conclusion of the trial.

At the end of the reporting period, the trial had just begun and the registry reported that there were 23 registrations in .1.6.e164.arpa.

# Glossary

<b>1xEvDO</b>	<p><b>single carrier evolution data optimised</b></p> <p>A CDMA2000-compatible 3G wireless technology with data transfer capacity of 300 to 600 kbit/s.</p>
<b>1xRTT</b>	<p><b>single carrier radio transmission technology</b></p> <p>A 2.5G wireless technology based on the CDMA platform, capable of data rates of up to 144 kbit/s. Also referred to as CDMA2000.</p>
<b>2G</b>	<p><b>second generation mobile telecommunications</b></p> <p>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.</p>
<b>2.5G</b>	<p><b>second generation plus</b></p> <p>An enhancement of the 2G mobile network technology to increase data carrying capacity, but not to the extent of the full functionality of 3G networks. GPRS and 1xRTT are 2.5G enhancements of GSM and CDMA networks respectively.</p>
<b>3G</b>	<p><b>third generation mobile telecommunications</b></p> <p>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.</p>
<b>ABA</b>	<p><b>Australian Broadcasting Authority</b></p> <p>Former Commonwealth regulatory authority responsible for broadcaster licensing and content regulation of broadcast and narrowcast services under the <i>Broadcasting Services Act 1992</i>. Also see ACMA</p>
<b>ABS</b>	<p><b>Australian Bureau of Statistics</b></p> <p>Commonwealth body responsible for collecting, analysing and publishing Australian demographic data.</p>
<b>ACA</b>	<p><b>Australian Communications Authority</b></p> <p>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.</p>
<b>ACCC</b>	<p><b>Australian Competition and Consumer Commission</b></p> <p>Commonwealth regulatory body with responsibilities derived from the <i>Trade Practices Act 1974</i>.</p>
<b>ACE</b>	<p><b>Australian Communication Exchange</b></p> <p>The current National Relay Service and text-based emergency call service provider.</p>
<b>ACIF</b>	<p><b>Australian Communications Industry Forum</b></p> <p>Communications industry self-regulatory body established in May 1997 and responsible for developing industry codes, technical standards and service specifications.</p>

G

<b>ACMA</b>	<b>Australian Communications and Media Authority</b> Commonwealth regulatory authority for broadcasting, online content, radiocommunications and telecommunications, with responsibilities under the <i>Broadcasting Services Act 1992</i> , the <i>Radiocommunications Act 1992</i> , the <i>Telecommunications Act 1997</i> and related Acts. Established on 1 July 2005 following the merger of the Australian Communications Authority and the Australian Broadcasting Authority.
<b>ADSL</b>	<b>asymmetric digital subscriber line</b> A transmission method allowing high data rate communication over existing copper wires. The downstream data (data downloaded by user) transmission rate is much higher than the upstream data rate.
<b>alternative service</b>	Telstra is required to offer USO customers access to an interim or alternative service when there is an extended delay in connecting or repairing the STS. This may be a service such as diversion to a mobile phone service or the provision of a second fixed line telephone service.
<b>AMPS</b>	<b>advanced mobile phone system</b> The so-called ‘first generation’ mobile phone system used for the analog mobile phone service in Australia, which closed in 2000.
<b>AMTA</b>	<b>Australian Mobile Telecommunications Association</b> Association of mobile industry suppliers and manufacturers.
<b>APT</b>	<b>Asia–Pacific Telecommunity</b> A government and industry-based telecommunications organisation for the Asia–Pacific region.
<b>ARPANSA</b>	<b>Australian Radiation Protection and Nuclear Safety Agency</b> Commonwealth regulatory and research agency responsible for protecting people and the environment from the harmful effects of ionising and non-ionising radiation.
<b>ASTAP</b>	<b>Asia–Pacific Telecommunity Standardization Program</b> A regional (APT) telecommunications standardisation program.
<b>ASTRA</b>	<b>Australian Subscription Television and Radio Association</b> Industry body representing subscription television, radio broadcasters and narrowcasters.
<b>ATUG</b>	<b>Australian Telecommunications Users Group</b> Organisation providing assistance, advice and information to members to optimise their communications capabilities and costs, and to act as their voice to government, regulators and carriers.
<b>auDA</b>	<b>.au Domain Administration</b> Organisation established to develop an effective self-regulatory regime for internet domain names in Australia.
<b>AUSTAG</b>	<b>Australian User Standards Telecommunication Advisory Group</b> A national advisory body under the management of N-TSAG that promotes user involvement and consideration of user requirements in standardisation at a national, regional and international level.
<b>bandwidth</b>	In the internet industry, bandwidth refers to the capacity of a connection to carry information, while in radiocommunications it is the amount of radiofrequency spectrum used for a particular function.
<b>bit/s</b>	<b>bits per second</b> Rate of transfer of data. See also Gbit/s, kbit/s, Mbit/s.
<b>BPL</b>	<b>broadband over power lines</b> Communications technique using the electricity grid or mains cabling within premises to deliver broadband services at higher data rates than previous power line communications.
<b>broadband</b>	Describes 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.

<b>BWA</b>	<b>broadband wireless access</b> Wireless communication technique capable of higher data rate transmission over greater distances and more rapid deployment than copper cable (digital subscriber line) technologies.
<b>byte</b>	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.
<b>CACS</b>	<b>Code Administration and Compliance Scheme</b> A self-regulatory complaint handling and dispute resolution process for voluntary signatories to ACIF industry codes, which requires signatories to report every six months on their internal compliance systems and procedures. The scheme covers compliance monitoring, routine compliance verification (where this is allowed for by the code) and reporting of systemic breaches by the TIO and the ACA. The TIO handles complaints received from residential and small business consumers in relation to codes on behalf of the CACS.
<b>call congestion</b>	The proportion of call attempts that are blocked because accessible network resources are unavailable, for example, when all outgoing lines or radio channels are busy.
<b>call drop-out</b>	Unintended disconnection of a call by a mobile network usually owing to a fall in the strength of the radio signal. The likelihood of call drop-out can be influenced by reflections and shadowing from physical features such as high-rise buildings, the size of the user base at any particular time in a mobile service area and customer usage.
<b>carrier</b>	The holder of a telecommunications carrier licence in force under the <i>Telecommunications Act 1997</i> .
<b>CDMA</b>	<b>code division multiple access</b> 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.
<b>CGE</b>	<b>computable general equilibrium</b> Economic modelling technique that includes explicit specifications of the behaviour of several economic actors, describes how demand and supply decisions made by different economic actors determine the prices of at least some commodities and factors, and produces numerical results.
<b>churn</b>	Transfer of a customer's telecommunications service from one provider to another.
<b>CLI</b>	<b>calling line identification</b> Data identifying the originating number or address.
<b>CND</b>	<b>calling number display</b> Service using CLI data that displays the calling party's number unless transmission of the number is blocked by the caller.
<b>CNR calls</b>	<b>caller no response calls</b> Calls to the emergency call service where there is no response when the operator asks which emergency service is required.
<b>congestion</b>	See call congestion.
<b>coverage area</b>	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.
<b>CPRs</b>	<b>Cabling Provider Rules</b> Rules introduced by the ACA in 2000 to promote telecommunications cabling industry self-regulation, using an industry-managed national registration scheme.
<b>CSG</b>	<b>Customer Service Guarantee</b> Standard providing for financial compensation to customers where requirements set out in the standard are not met.

<b>CSP</b>	<b>carriage service provider</b> 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 <i>Telecommunications Act 1997</i> .
<b>CTM</b>	<b>cellular text modem</b> A modem enabling text communications over the GSM digital cellular network.
<b>CTN</b>	<b>Consumers' Telecommunications Network</b> Association representing telecommunications consumers.
<b>CTRAC</b>	<b>Communications Technical Regulation Advisory Committee</b> Committee established to provide strategic policy advice and recommendations to ACMA about the compliance framework for technical regulation of communications.
<b>data rate</b>	The volume of data that is able to be transmitted over a given period of time. Data rates are usually measured in bits per second.
<b>data traffic volumes</b>	The volume of data transmitted, between two points. It usually refers to the volume of data transferred in both directions between a customer and the customer's ISP. Data traffic is measured in bytes.
<b>DCITA</b>	<b>Department of Communications, Information Technology and the Arts</b> Commonwealth department responsible for, among other things, communications policy.
<b>DDA</b>	<b>Disability Discrimination Act 1992</b> Commonwealth legislation that makes discrimination on account of one's disability unlawful.
<b>DDSO</b>	<b>digital data service obligation</b> Defined in section 10 of the TCPSS, the DDSO is the obligation to ensure that a 64 kbit/s connection is reasonably accessible to all people in Australia, wherever they reside or carry on business.
<b>DEP</b>	<b>Disability Equipment Program</b> Telstra's program for supplying people with disabilities with telecommunications equipment.
<b>dial-up subscribers</b>	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
<b>drop-out</b>	See call drop-out.
<b>DSL</b>	<b>digital subscriber line</b> Transmission technique that dramatically increases the digital capacity of telephone lines into the home or office. See also ADSL, xDSL.
<b>ECP</b>	<b>emergency call person</b> Defined in section 7 of the <i>Telecommunications Act 1997</i> , an ECP is a person (recognised under section 19 of the Act) who operates an emergency call service, including that person's employee or contractor.
<b>ECS</b>	<b>emergency call service</b> Defined in section 7 of the <i>Telecommunications Act 1997</i> , an ECS means a service for receiving and transferring calls to emergency services such as police, fire brigade and ambulance.
<b>e-marketing</b>	<b>electronic marketing</b> The use of web-based applications and services to select and segment customers, develop and execute marketing campaigns, and distribute leads to sales channels.
<b>EMR</b>	<b>electromagnetic radiation</b> Transmission of energy in the form of waves having an electric and magnetic component.

<b>ENUM</b>	<b>electronic numbering</b> A protocol that translates telephone numbers into a format that can be recognised by the internet protocol, and enables the linking of telephone numbers with other communications media, such as email, facsimile and mobile phone numbers.
<b>ESA</b>	<b>exchange service area</b> One of approximately 5,000 areas serviced by exchanges in Telstra's fixed telephone network.
<b>ESAC</b>	<b>Emergency Services Advisory Committee</b> Committee established by the ACA in May 2000 to provide advice on emergency service issues, with representation from government, service provider, emergency service and consumer organisations.
<b>ESO</b>	<b>emergency service organisation</b> Organisation providing an emergency service, such as police, ambulance or fire brigade.
<b>ETSI</b>	<b>European Telecommunications Standards Institute</b> The European telecommunications standards-setting body.
<b>exchange</b>	Network node where various numbers and types of communication lines are switched by the telecommunications network operator. Exchanges operate at local, long distance and international levels and all subscribers are connected to their local exchange.
<b>FCC</b>	<b>Federal Communications Commission</b> United States Government body responsible for communications regulation.
<b>FLRN</b>	<b>freephone and local rate number</b> Telephone numbers commencing with the digits 180 (freephone) and 13 (local rate).
<b>FLRNP</b>	<b>freephone and local rate number portability</b> Portability of freephone and local rate numbers, introduced in November 2000, using a not-for-profit independent body (INMS) as the manager of a centralised number pool, responsible for allocation and porting of these numbers, as the ACA's delegate.
<b>FSA</b>	<b>field service area</b> One of 44 broad geographic regions in Telstra's fixed telephone network.
<b>FTTH</b>	<b>fibre-to-the-home</b> Access network involving the use of optical fibre cable transmission from the exchange to the subscriber's dwelling.
<b>FTTK (also known as FTTC)</b>	<b>fibre-to-the-kerb</b> Access network involving deployment of optical fibre cable infrastructure from network nodes to a point close to the subscriber's premises, then the use of copper cable (usually existing) to connect the dwelling.
<b>FTTP</b>	<b>fibre-to-the-premises</b> Access network involving deployment of optical fibre cable services from the exchange to a service pedestal or underground utility box and coaxial or copper pair cable from that point to subscriber dwellings.
<b>GB</b>	<b>Gigabytes</b> A billion bytes.
<b>Gbit/s</b>	<b>Gigabits per second</b> Data transfer rate of a billion bits per second. See bit/s.
<b>GDSS</b>	<b>general digital data service</b> Carriage service that provides a digital data capability broadly comparable to that of a 64 kbit/s channel of an ISDN service. The service is to be provided in digital data service areas, which are within a radial distance of four kilometres from an ISDN-capable telephone exchange for metropolitan areas, or within a radial distance of six kilometres for rural areas.



<b>GDP</b>	<b>gross domestic product</b> The market value of all the goods and services produced by labour and capital in Australia.
<b>geographic numbers</b>	Numbers used to provide access to local telephone services and related voicemail services, facsimile services, internet dial-up services and termination numbers for freephone and local rate services. Also known as local numbers.
<b>GHz</b>	<b>Gigahertz</b> One billion Hertz, where one Hertz is the measurement of frequency equal to one cycle of electromagnetic radiation per second.
<b>GIS</b>	<b>geographical information system</b> A system of hardware and software used for storage, retrieval, mapping and analysis of geographic data.
<b>GPRS</b>	<b>general packet radio service</b> Wireless communications service, often referred to as 2.5G, that can provide data delivery rates of up to 56 kbit/s and access to the internet using wireless application protocol technology, while making or receiving voice calls.
<b>GPS</b>	<b>global positioning system</b> Satellite navigation system operated by the United States Department of Defense for military and civil purposes.
<b>GSC</b>	<b>Global Standards Collaboration</b> A collaborative group of peak international standardisation bodies, which establishes and maintains informal linkages between national, regional and international telecommunications standards activities.
<b>GSM</b>	<b>global system for mobile communication</b> The widely used European digital cellular network standard.
<b>HCO</b>	<b>hearing carry over</b> Telecommunications relay service enabling people with speech impairment to listen to the telephone conversation of another person and type a response on a TTY.
<b>HFC cable</b>	<b>hybrid fibre coaxial cable</b> Network element consisting of optical fibre on main routes, supplemented by coaxial cable closer to a customer's premises.
<b>HiBIS</b>	<b>Higher Bandwidth Incentive Scheme</b> An Australian Government program for subsidising ISPs that provide approved broadband services to consumers in rural and remote areas at less than specified prices.
<b>HREOC</b>	<b>Human Rights and Equal Opportunity Commission.</b> The Commonwealth agency with responsibility for administration of Australia's equal opportunity and anti-discrimination laws, including the <i>Disability Discrimination Act 1992</i> .
<b>IAP</b>	<b>Internet Assistance Program</b> Joint initiative between the government and Telstra that helps internet users achieve a data rate of at least 19.2 kbit/s. The program is open to customers of all internet and telecommunications companies using the Telstra fixed network.
<b>ICET</b>	<b>information, communication and entertainment technologies</b> Acronym used to describe these related industry fields.
<b>ICP</b>	<b>interception capability plan</b> Plan to be prepared by a carrier or CSP to provide for interception as required under Part 15 of the <i>Telecommunications Act 1997</i> .
<b>IEEE 802.11</b>	Family of radiocommunications standards covering wireless short-range communications equipment. See also WiFi, WLAN and WiMAX.

<b>IMEI number</b>	<b>international mobile equipment identity number</b> Unique electronic serial number of GSM mobile phone handsets, which can be used by mobile carriers to block calls to and from stolen handsets.
<b>INMS</b>	<b>Industry Number Management Services Ltd</b> Independent company established by carriers and CSPs to allocate and manage portable freephone and local rate numbers from a number pool, on behalf of ACMA.
<b>interim service</b>	Voice telephony service that uses mainly mobile or satellite technology and is charged at STS rates. Telstra is required to offer USO customers access to an interim or alternative service when there is an extended delay in connecting or repairing the STS.
<b>internet dumping</b>	Occurs when the telephone line connection between a computer and the internet is disconnected and then reconnected to a new telephone number without the customer's full knowledge or consent. The new number, usually an international number, has a high call charge rate.
<b>IP</b>	<b>internet protocol</b> The key member of the suite of internet protocols at the logical layer, specifying packet addressing and routing of data through the internet.
<b>IPND</b>	<b>Integrated Public Number Database</b> Database of information about customers of telecommunications services in Australia, for all carriers and CSPs.
<b>IPv4</b>	<b>internet protocol version 4</b> The currently deployed version of the internet protocol. IPv4 allows for 2 <sup>32</sup> addresses (about 4.3 billion), which is widely recognised as insufficient for emerging applications and addressable devices.
<b>IPv6</b>	<b>internet protocol version 6</b> The next generation internet protocol. IPv6 has an address space of 2 <sup>128</sup> , and includes improved security and greater support for network configuration and multimedia applications.
<b>IPsec</b>	<b>internet protocol security</b> A standard for securing internet protocol IP communications by encrypting and/or authenticating all IP packets. IPsec provides security at the logical layer.
<b>ISDN</b>	<b>integrated services digital network</b> Digital carriage network for both voice and data. A digital alternative to an analog public switched telephone network.
<b>ISP</b>	<b>internet service provider</b> A CSP offering internet access to the public or another service provider.
<b>ITU</b>	<b>International Telecommunication Union</b> Specialised agency of the United Nations within which governments and the private sector coordinate global telecommunications networks and services, including radiocommunications.
<b>ITU-T</b>	<b>ITU – Telecommunication Standardization Sector</b> The branch of the ITU concerned with telecommunications standardisation. The ITU-T is the principal worldwide body for telecommunications standards.
<b>IVR</b>	<b>interactive voice response</b> Software application that accepts a combination of voice and touch-tone keypad selection to enable callers to select an appropriate response, including being connected to an operator. Common uses of this type of application include directory assistance, telephone banking, incoming call routing, telephone betting and other public information services.
<b>KB</b>	<b>kilobyte(s)</b> A thousand bytes. See byte(s)

<b>kbit/s</b>	<b>kilobits per second</b> Data transfer rate of 1,000 bits per second. See bit/s.
<b>kHz</b>	<b>kilohertz</b> One thousand Hertz (see also GHz and MHz).
<b>LAN</b>	<b>local area network</b> A cable-based or wireless networking protocol giving high-speed connectivity between computers and associated devices throughout a building and, possibly, neighbouring buildings.
<b>local numbers</b>	See geographic numbers.
<b>LNP</b>	<b>local number portability</b> Portability for local (geographic) numbers. See number portability.
<b>low-impact facilities</b>	Communications facilities that are considered to have a low impact on their environment. They include underground cabling, small radiocommunications antennas and dishes, in-building subscriber connections and public payphones. The Telecommunications Act provides carriers with immunity from state and territory planning laws for the installation of ‘low-impact’ facilities.
<b>MA15+</b>	Content deemed by the OFLC under the National Classification Code as unsuitable for viewing by persons aged under 15 years.
<b>MB</b>	<b>Megabyte(s)</b> One million bytes. See byte(s).
<b>Mbit/s</b>	<b>Megabits per second</b> Data transfer rate of one million bits per second. See bit/s.
<b>MCF</b>	<b>Mobile Carriers Forum</b> Industry body established, among other things, to improve carrier efforts to co-locate mobile phone facilities and ensure coordinated network rollouts.
<b>MHz</b>	<b>Megahertz</b> One million Hertz (see also Gigahertz).
<b>the Minister</b>	<b>Minister for Communications, Information Technology and the Arts</b> Minister responsible for ACMA and its governing legislation, and the legislation that ACMA administers.
<b>MSD notice</b>	<b>mass service disruption notice</b> Public notification by a CSP about an exemption from complying with performance requirements under the CSG standard due to circumstances beyond its control. The notice must specify the start and end dates of the exemption period, the geographic area to which it relates and the number of customers affected by the exemption.
<b>MMS</b>	<b>multimedia message service</b> Mobile telecommunications data transmission service for sending messages with a combination of text, sound, image and video to MMS-capable handsets.
<b>MNP</b>	<b>mobile number portability</b> Portability for mobile phone numbers. See number portability.
<b>MP3</b>	<b>mpeg (moving picture expert group) layer 3</b> Audio compression standard for encoding music without losing sound quality. Files are compressed into digital audio files small enough for electronic transmission. Format commonly used for transferring, storing and listening to music on the internet.
<b>MVNO</b>	<b>mobile virtual network operator</b> Mobile phone service retailer that uses a mobile carrier’s network and sets up a technical support layer replicating the carrier’s mobile switching centre, such that the MVNO maintains control over its subscriber information.

<b>narrowband</b>	A class of telecommunications services such as dial-up internet access that offer data rates of 64 kbit/s or lower.
<b>NAT</b>	<b>network address translation</b> A technique in which the source and/or destination addresses of IP packets are rewritten as they pass through a router or firewall. It is most commonly used to enable multiple hosts on a private network to access the internet using a single public IP address.
<b>NCD</b>	<b>nominated carrier declaration</b> Declaration made by the owner of a telecommunications network unit (facilities or infrastructure for delivery of telecommunications services) nominating a licensed carrier that will be responsible for the specified network unit.
<b>NGN</b>	<b>next generation network</b> General term for developments in networks using a variety of different access and core technologies covering wired, wireless and mobile communications that are generally based on IP and packet techniques and will provide new service capabilities. A primary characteristic is the decoupling of services from networks, allowing these to be offered separately and to evolve independently.
<b>non dial-up subscribers</b>	Subscribers with permanent and ‘always on’ connections to the internet using various technologies, including: ISDN connections that do not require the user to dial up, DSL, cable, wireless, satellite, dedicated data service, frame relay.
<b>NRF</b>	<b>Network Reliability Framework</b> Requirement on Telstra from January 2003 to provide regular reports to the ACA on the reliability of its fixed line services, and to remediate the network in areas with particularly poor performance.
<b>NRS</b>	<b>National Relay Service</b> 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 translation service between voice and non-voice users of the standard telephone service. Currently provided by Australian Communication Exchange.
<b>NRSCC</b>	<b>National Relay Service Consultative Committee</b> Committee that provides advice to ACMA on NRS matters.
<b>number portability</b>	Arrangements allowing customers to transfer their telecommunications service from one service provider to another without changing their number.
<b>OFLC</b>	<b>Office of Film and Literature Classification</b> Australian Government agency that administers the Commonwealth <i>Classification (Publications, Films and Computer Games) Act 1995</i> and the National Classification Code, for all films, computer games and submittable publications that are exhibited, sold or hired in Australia.
<b>pay TV</b>	<b>subscription television service</b> Service providing access, for a fee, to television channels transmitted using cable, satellite or terrestrial microwave.
<b>payphone</b>	A public telephone where calls may be paid for with coins, phone cards, credit cards or reverse charge facilities.
<b>PDA</b>	<b>personal digital assistant</b> A term for any small mobile hand-held device that provides computing and information storage and retrieval capabilities for personal or business use.
<b>phishing</b>	The fraudulent practice of using official-looking emails and internet sites in an attempt to mislead internet users into disclosing online passwords, user names and other personal information.
<b>PIN</b>	<b>personal identification number</b> Number used to provide secure access to a service.

<b>PoP</b>	<b>point of presence</b> Geographic location where a CSP (including ISPs) can be accessed by a customer. Cost of accessing the service is related to whether the nearest PoP is within a customer's local call area (local PoP). Normally used for services requiring dial-up access to the internet.
<b>post-paid</b>	A contract under which a user is charged on a periodic basis based on service usage during the billing period.
<b>portability</b>	See number portability.
<b>premium rate services</b>	Content accessed on numbers with a 190 prefix, where the cost of the call, including access to the content, is included on the customer's telephone bill. Content includes sports results, weather forecasts, astrology services, competition entries, dating contact and telephone sex services. Premium rate services include SMS as well as voice, fax and data.
<b>pre-paid</b>	A contract system by which users pay an amount up front to purchase a certain amount of usage or credit.
<b>priority assistance</b>	Service for people with a diagnosed life-threatening medical condition entitling them to faster connection and fault repair of their fixed-line telephone service.
<b>PSTN</b>	<b>public switched telecommunications network</b> Public telecommunications network operated by a carrier to provide services to the public.
<b>R18+</b>	Content deemed by the OFLC as unsuitable for viewing by a minor, under the National Classification Code.
<b>remediation</b>	Work done on a service over and above that normally undertaken to repair a fault to eliminate a recurrent problem.
<b>RTI</b>	<b>Regional Telecommunications Inquiry</b> Inquiry chaired by Mr Dick Estens and established by the Australian Government in 2002 to investigate communications services in rural, regional and remote areas of Australia.
<b>SDDS</b>	<b>special digital data service</b> Service that must be supplied on request to the four per cent of the Australian population who do not have access to ISDN-comparable data services (see also DDSO and GDDS).
<b>SFOA</b>	<b>standard form of agreement</b> A standard contract, used by a CSP and lodged with ACMA, listing the terms and conditions of service in detail.
<b>SIO</b>	<b>services in operation</b> Refers to the number of services provided by a telephone company at a particular time. The term is used in the context of both fixed line and mobile services.
<b>SIM card</b>	<b>subscriber identity module card</b> Type of smart card for use with a mobile phone that can be securely programmed with identification information of the account holder of the mobile phone service.
<b>SIP</b>	<b>session initiation protocols</b> Signalling protocols for internet conferencing, telephony, presence, events notification and instant messaging.
<b>slamming</b>	Unauthorised transfer of a customer's telecommunications service to another provider.
<b>smartnumbers<sup>®</sup></b>	Specified freephone (1800) or local rate (13 or 1300) numbers allocated by auction that are considered desirable because they can be translated to a 'phoneword' or have a memorable pattern.
<b>SMP</b>	<b>standard marketing plan</b> Approved plan by the universal service provider of how it will meet the USO.

<b>SMS</b>	<b>short message service</b> Mobile telecommunications data transmission service that allows users to send short text messages to each other using the mobile handset keypad.
<b>spam</b>	Unsolicited messages often sent in bulk to a large number of email addresses.
<b>spyware</b>	Software on a computer that monitors the user's activity and sends information back to the spyware author. Spyware has the ability to track the websites a user visits, monitor keystrokes, scan files on the hard drive and change the user's homepage.
<b>SSR</b>	<b>speech-to-speech relay</b> Telecommunications relay service enabling two people with speech impairment to have a two-way conversation over the telephone.
<b>STS</b>	<b>standard telephone service</b> 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.
<b>SZU</b>	<b>standard zone unit</b> One of over 2,000 geographical regions in Australia where calls between services within that zone are charged as local, untimed calls.
<b>TAPRIC</b>	<b>Telecommunications Action Plan for Remote Indigenous Communities</b> Plan developed from a study commissioned by the Australian Government that gathered information about telecommunications services required by remote Indigenous communities.
<b>TCPSS ACT</b>	<b><i>Telecommunications (Consumer Protection and Service Standards) Act 1999</i></b> Legislation administered by ACMA covering consumer safeguards including the CSG, the USO, the TIO scheme and regulation of telephone sex services.
<b>TEDICORE</b>	<b>Telecommunications &amp; Disability Consumer Representation</b> 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.
<b>TIO</b>	<b>Telecommunications Industry Ombudsman scheme</b> Industry-funded independent dispute resolution service established in December 1993, for consumers unable to resolve complaints with their telecommunications carrier or CSP (including ISPs).
<b>TISSC</b>	<b>Telephone Information Services Standards Council</b> Independent self-regulatory and consumer complaint resolution body funded by the telephone information services industry.
<b>TSAG</b>	<b>Telecommunication Standardization Advisory Group</b> Group responsible for advising on management of the work of the ITU-T.
<b>TSI</b>	<b>Telecommunications Service Inquiry</b> Inquiry established by the Australian Government in 2000, under Mr Tim Besley AO, to review the adequacy of telecommunications services offered in Australia, especially in regional and remote areas. The inquiry reported in September 2000.
<b>TTY</b>	<b>Teletypewriter</b> 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 and translated by the NRS.
<b>ULLS</b>	<b>unconditioned local loop service</b> Use of unconditioned communications over copper wire pairs between the boundary of a telecommunications network at a customer's premises and a point of connection with a service provider usually other than the owner of the unconditioned network.

<b>USO</b>	<b>universal service obligation</b> Obligation under the <i>Telecommunications Act 1997</i> 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.
<b>UWB</b>	<b>ultra wideband</b> Wireless solutions for transmitting digital data over a wide spectrum of frequency with very low power and which can transmit data at very high rates for a range of applications including wireless local area networks.
<b>V.18</b>	An ITU-T Recommendation that supports interworking between text telephones based on at least eight incompatible modem standards.
<b>V.21</b>	An ITU-T modem standard used for some text telephones in Europe.
<b>VCO</b>	<b>voice carry over</b> Telecommunications relay service enabling 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.
<b>virus</b>	Programs that have been designed to spread between computers. They can destroy files and prevent other programs from operating properly.
<b>VoIP</b>	<b>voice over internet protocol</b> A protocol for transmitting voice over packet-switched data networks. Also called IP telephony.
<b>WAP</b>	<b>wireless application protocol</b> 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.
<b>WCDMA</b>	<b>wideband code division multiple access</b> 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).
<b>WiFi</b>	<b>wireless fidelity</b> Used generically to refer to wireless local area network (IEEE 802.11) technology providing short-range, high data rate connections between mobile data devices and access points connected to a wired network.
<b>WiMAX</b>	<b>Worldwide Interoperability for Microwave Access</b> Industry group organised to advance the IEEE 802.16 standards for broadband wireless access networks for multimedia applications with a wireless connection.
<b>WLAN</b>	<b>wireless local area network</b> Network using radiocommunications (rather than cable) to connect computer terminals or other digital devices over relatively short distances.
<b>WLL</b>	<b>wireless local loop</b> Use of radiocommunications rather than cable to connect a fixed or mobile handset and a specified telecommunications base station connected to a telecommunications network.
<b>WTSA</b>	<b>World Telecommunication Standardization Assembly</b> Peak conference of the ITU-T, generally held every four years.
<b>X18+</b>	Content classified by the OFLC under the Australian Classification Code as containing sexually explicit activity that is likely to cause offence to a reasonable adult and is unsuitable for viewing by a minor.
<b>xDSL</b>	General term for digital subscriber line transmission methods.

# Index

## A

### AAPT

- CSG connection performance 147
- CSG fault performance 147
- CSG services 59, 60
- priority assistance 149
- supply of equipment to people with a disability 55
- USO levies 158, 159

### accessible telecommunications for people with disabilities 51, 135

- AMTA's Disability Action Plan 88–9
- disability equipment programs 54–5
- National Relay Service 51–4, 87, 88, 180
- new draft code 127
- people with hearing or speech impairment 87–8
- people with vision impairment 88

### ACIF (Australian Communications Industry Forum) 33, 37, 102, 126

- review of Wiring Rules Standard 138
- see also* industry codes

### ACIL Tasman 21–31, 60–1, 82

### ADSL services 22, 23, 102, 103

### Agency Co-ordinator 183

### allocation of numbers 194–7

- carriage service provider identification codes 196
- data network access service numbers 196
- geographic numbers 6, 11, 194–6
- mobile numbers 194

### Any-To-Any Text Connectivity Options (TATA)

- Working Group 87, 88, 135

### Apatula (Central Australia) 165

- current/future service initiatives 168
- regional profile 165
- service availability and quality of service performance 166–7
- service repair and connection performance 167–8

### Arnhem East (NT Top End) 165

- current and future service initiatives 169
- regional profile 166
- service availability and quality of service performance 168–9
- service repair and connection performance 169

### Asia-Pacific Telecommunity Standardization Program 140–1

### .au Domain Administration Ltd 118, 197

### AusCERT 113

### Australian Broadcasting Authority (ABA) 106

- merger with ACA into ACMA 6

### Australian Bureau of Statistics (ABS) 2, 102–3, 106

### Australian Communication Exchange (ACE) 53

- emergency call persons, performance 180

### Australian Communications Authority (ACA)

- internet dumping investigation 46
- merger with ABA into ACMA 6
- review of Cabling Provider Rules 138
- Vision 20/20 project 6, 13–19

### *Australian Communications Authority (Service Provider Determination) Direction 2004 (No. 1) 91*

### *Australian Communications Authority (Service Provider Determination) Direction 2004 (No. 2) 92*

### Australian Communications and Media

#### Authority (ACMA) 1

- established from merger of ACA and ABA 6

### Australian Competition and Consumer Commission (ACCC) 6, 37, 103, 198

- complaints 48–9
- billing 49
- bundling 49
- contracts 49
- credit default 49
- internet services 49
- mobile services 48

### Australian Direct Marketing Association 126

### *Australian eMarketing Code of Practice 7, 118, 121, 126*

### Australian ENUM Discussion Group 203



Australian High Tech Crime Centre 112  
 Australian Internet Security Initiative 113  
 Australian Mobile Telecommunications Association  
 (AMTA), Disability Action Plan 88–9  
 Australian Phone Word Association (APWA) 202  
 Australian Radiation Protection and Nuclear Safety  
 Agency (ARPANSA) 189  
 Australian User Standards Telecommunication Advisory  
 Group (AUSTAG) 143

## B

Banking and Financial Services Ombudsman 39  
 Baycorp Advantage, credit defaults listed with 39–40  
 benefits resulting from changes in  
 telecommunications services 21–31  
   benefits to Australian economy 22  
   consumer and small business benefits 27–8  
 developments  
   fixed line developments 25–6  
   internet service sector 22–4  
   mobile phone services 25  
 estimation  
   regional analysis 27  
   Tasman-Global Telco model 26–7  
 impacts on consumers 30  
 impacts on industry 29  
 impacts on states 29  
 key findings 21–2  
 ‘best practice’ consumer contract 36  
 Billing Code 130–1  
 billing complaints 49, 86, 130  
 BIS Shrapnel, mobile phone survey 76, 77  
 broadband internet services 22, 23–4, 102, 103, 106  
   National Broadband Strategy 114–15  
   subscribers, growth 2, 4, 23  
   terrestrial availability by state 23–4  
   usage 106  
 bundling complaints 49

## C

cable internet services 22, 23  
 Cabling Industry Committee 136, 138  
 Cabling Provider Rules 136  
   ACA review 138  
 cabling regulation 136  
   licensed and registered cablers 5, 125, 136  
   monitoring and enforcing compliance 137–8  
*Cabling Requirements for Business Code* 7, 136  
 cabling violations 137  
 Call Charging and Billing Accuracy Code 132  
 Calling Number Display Code 135  
 car trading advertising (spam case study) 122  
 carriage service provider identification codes  
 (CSPID) 196

carriage service providers (CSPs) 58, 79, 183  
*Carrier Licence Conditions (Telstra Corporation  
 Limited) Declaration 1997* 37  
 carrier licensing 2  
   industry development plans 10  
   nominated carrier declarations 10  
   trends 9–10  
   trial certificates 10  
 carrier rights and obligations – installation of  
 telecommunications facilities 188–91  
 CDMA 1xEvDO network 71  
 CDMA networks 3, 4, 71, 72, 73, 74  
 CDMA WLL service quality issues 63–4  
 CDMA2000 network 71  
 Commercial Churn Code 128, 134  
 Communications Law Centre 34  
 Communications Technical Regulation Advisory  
 Committee (CTRAC) 135  
 Community Phones Program 161, 162, 163  
 competition in the telecommunications market 193–203  
   allocation of numbers 6, 11, 194–7  
   applications from industry for new standard  
   zone units 200  
   domain name administration 118, 197–8  
   ENUM 203  
   number portability 11, 198–200  
   **smartnumbers**<sup>®</sup> 11, 201–2  
 competitive indicators 11  
 Complaint Handling Code 44, 127, 131  
 compliance with consumer codes 130  
 compliance with registered codes 130  
 Connect Outstanding (Code) 127  
 consumer benefits from improvements in  
 telecommunications sector 27, 28  
*Consumer Benefits Resulting from Australia’s  
 Telecommunications Sector* 21–31, 60, 82  
 consumer codes, compliance with 130–1  
 consumer complaints 42–50  
   billing 49, 86, 130  
   bundling 49  
   code breaches 128–30  
   complaint handling 131  
   contracts 49  
   credit control/defaults 8, 39, 49, 130  
   customer transfer 131  
   financial services sector 39  
   fixed telephone services 8, 66–7  
   interim and alternative services 153  
   internet dumping 45–7  
   internet services 49, 108–9  
   mobile services 48, 49, 85–6  
   prices, terms and conditions 131  
   privacy 41  
   spam 121–2

- telephone sex services 50
  - to ACCC 48–9
  - to TIO 8, 39, 43–5, 46, 50, 66–7, 85–6, 108–9, 128–31, 153
  - to TISSC 47, 50
- consumer contracts
  - complaints to ACCC 49
  - unfair terms in 34–6
- Consumer Contracts Code 7, 33, 118, 126
  - ‘best practice’ contract 36
  - development 34–5
  - review of *Telecommunications (Standard Form of Agreement Information) Determination 2003* 35–6
- Consumer Driven Communications project 33–4, 36–7
- consumer issues 7–9, 33–55, 104–5
- consumer satisfaction
  - connection of services 65–6
  - fault repairs 64–5
  - fixed telephone services 8, 64–6
- consumer satisfaction survey 8, 57, 64–6
- content regulation
  - internet websites, newsgroups and P2P networks 113–14
  - premium rate mobile content services 92–4
- Coordinated Communications Infrastructure Fund (CCIF) 115, 163
- copyright infringement, in sound recordings 107
- credit control, complaints to TIO 8, 39
- credit defaults
  - complaints to ACCC 49
  - notified by CSPs and ISPs to credit bureaus 5, 39–40
- Credit Management Code 8, 33, 41, 127
  - compliance with 130
- credit management practices, industry review 38–40
- Customer Service Guarantee (CSG) Standard 146–7
  - connection performance 3, 145, 146–7
  - decline in number of services covered 3, 4, 57, 59, 145
  - fault repair performance 3, 145, 146–7
  - mass service disruptions 148
  - service providers’ performance 145, 146–7
- Customer Transfer Code 127, 131

## D

- data network access service numbers 196
- Demand Aggregation Broker Program 115–16
- Department of Communications, Information Technology and the Arts (DCITA) 6, 37, 96, 135, 162
- Deployment of Mobile Phone Network Infrastructure Code 189, 191
- dial-up internet subscribers 2, 4, 101
- digital data service obligation (DDSO) 114, 154–8
  - general digital data service (GDDS) 154, 155–6
  - special digital data service (SDDS) 154, 155, 156–8
- Disability Discrimination Act 1992* 54, 152

- disability equipment programs 54
  - supply of disability equipment 54–5
- disclosure of customer information 5, 186–7
- domain name administration 118, 197–8
  - dispute resolution policy 197
  - managing complaints 197
  - new 2LDs 198
- Domain Name Suppliers’ Code of Practice (2004–05) 197
- domain name system (DNS) 101, 203

## E

- e-commerce 106
- electromagnetic radiation regulation 189
- eligible revenue, USO 11, 158–9
- emails 106
  - spam 7, 110, 112, 122
- eMarketing Code 7, 118, 121, 126
- emergency call persons, performance
  - Australian Communication Exchange 180
  - Telstra 176–9
- emergency call service 175, 176–82
  - legislative amendment 181
- Emergency Call Service Requirements (code) 135, 181
- emergency call statistics 5, 177–80
  - calls to 000 and 112 5, 177–9
  - calls to 106 5, 180
- emergency call trends and issues
  - awareness of the 112 emergency number 181
  - developments in handset functionality 181
  - location-based information 181–2
  - proposal to block SIMless GSM calls to emergency services 182
- Emergency Services Advisory Committee (ESAC) 182
- employment benefits from improvements in telecommunications sector 28
- ENUM 193, 203
- Extended Mobile Phone Coverage in Regional Australia program 163–4
- extended zones service upgrade 63–4

## F

- Fair Trading Act 1999* (Vic) 34
- fault repair, consumer satisfaction 64–5
- fault repair performance, CSG 3, 146–7
- financial hardship and telecommunications 37–41
  - reducing hardship 37
- review of industry credit management practices 38–40
  - Telstra’s Low-Income Measures Assessment Committee (LIMAC) 37–8
- financial services sector complaints 39
- fixed telephone services 3, 4, 25–6, 57–67
  - complaints to TIO 8
  - consumer satisfaction 64–6

- with connection of services 65–6
- with fault restoration 64–5
- decline in subscribers 1, 3, 25, 58–9, 62
- extended zones service upgrade 63–4
- improvements in service for pair gain system 62–3
- remote Indigenous communities 161–2
- revenue changes 25–6, 61
- service quality improvements 62–4
- usage trends and price movements 60–2

fixed telephone services market 58–60

- growth in carrier numbers 60
- supply of CSG services 59–60

freephone and local rate numbers (FLRNs)

- portability 199–200
- see also smartnumbers®*

## G

GDP, and improvements in telecommunications sector 28

general digital data service (GDSD) obligation 154, 155

- fulfilment 155–6

geographic domain names 198

geographic numbers, allocation 5, 6, 11, 194–6

Gibson Quai AAS 21, 184, 185

GSM networks 3, 71, 72, 73, 75

## H

Handling Unwelcome Calls Code 135

Higher Bandwidth Incentive Scheme (HiBIS) 2, 115

Hotkey 156, 158

Human Rights and Equal Opportunity Commission (HREOC) 37, 51

Hutchinson

- 3G networks 71, 72
- mobile content services 6, 90
- mobile phone market share 77, 78
- pre-paid and post-paid mobile customers 81

## I

Indigenous Telecommunications Steering Group 162

industry codes 7, 8, 41, 44, 118, 125–35, 181, 184

- code complaints recorded by TIO 128–30
- code signatories 5, 128
- codes registered 5, 126–7
- codes under development or revision 127
- compliance with registered codes 7, 130

industry credit management practices, review 38–40

*Industry Development Plans (Declared Kinds of Carriers) Declaration (No. 1 of 2004)* 10

Industry Number Management Services Ltd 199–200

installation of telecommunications facilities 188–91

- Deployment of Mobile Phone Network Infrastructure Code 189, 191
- government–industry collaboration 190–1

- industry initiatives 190
- industry responses to community concerns 189–91
- investigation of complaints 188–9
- regulation of electromagnetic radiation 189

instant messaging 106

Integrated Public Number Database (IPND) 184–5

- audits of accuracy 184–5
- level of unlisted numbers 41
- proposed standard 41–2
- unlawful access 41

Integrated Public Number Database (IPND) Code 5, 127, 134–5, 184, 185

interception capabilities 183–4

- IC Plans 183–4

interim and alternative services 5, 152–3

international and regional standards making,

- consumer involvement 142–3

international internet dialler services

- complaints 46
- industry responses 46

International Telecommunication Union, Telecommunication Standardization Sector 138, 139

- mutual recognition arrangements 142
- Study Groups 140, 141–2, 143

international telecommunications standardisation, Australian industry involvement 138–43

internet, analytical model 100

- applications layer 101
- computing interface developments 102
- content layer 101
- developments at the physical layer 101–2
- layered approach 100
- logical layer 101
- physical infrastructure layer 101

Internet Corporation for Assigned Names and Numbers (ICANN) 116, 197

internet dumping

- ACA investigation 46
- complaints 45–7
- international responses 46–7

Internet Industry Association 37, 127

Internet Industry Codes of Practice 93

internet integrity 109, 111–12

internet pyramid marketing scheme (spam case study) 122

internet regulation 111–13

- international agreements 113
- international standardisation 113

internet security 112–13

internet service providers and electronic messaging service providers code 127

internet service providers (ISPs) 4, 101

- code of practice for dealing with spam 118
- move into fixed line market 58, 60
- trends 104

internet services 2, 22–4, 99–119

ADSL 22, 23, 102  
 affordability 23  
 average revenue per subscriber per internet  
   technology type 23  
 broadband 2, 22, 101, 102, 103, 106, 114–15  
 cable 22, 23  
 children's usage 106  
 complaints 49, 108–9  
 consumer issues 104–5  
 content regulation 113–14  
 equitable access 109, 114–16  
 growth 1, 2  
 narrowband (dial-up) 2, 101  
 online content 113–14, 117  
 policy and regulatory, and industry issues 111–19  
 prices 104  
 quality of service 104–5  
 satellite broadband 22, 23  
 spam 110, 111–12, 116, 117, 118, 121–2  
 spyware 110, 117  
 terrestrial broadband availability 23–4  
 trust and confidence 108–10  
 usage 105–10  
 user awareness and responsibility 119  
 user education and accessible design 116  
 user empowerment 107–8  
 volume of download per internet technology  
   per subscriber 22  
 internet services industry regulation 116–18  
   Australian domain names 118, 197–8  
   Australian industry codes of practice and other  
   industry initiatives 117–18  
 international 116  
 international cooperation 116–17  
 internet subscriber trends  
   Australia 4, 102–3  
   international 103  
 IPND Code 127, 134–5, 184, 185

## K

*kidsonline@home* study 106, 119

## L

licensed cablers 5, 136  
 local number portability 5, 193, 198–9  
 Local Number Portability (LNP) Code 128, 134, 199  
 lost and stolen mobile phones 95  
 Low-Income Measures Assessment Committee  
 (LIMAC) 37–8

## M

m-commerce 89  
 mass service disruptions 148  
 Metropolitan Broadband Connect 115  
 MMS message services, complaints 86  
 MMS messages 3, 4, 80  
 Mobile Carriers Forum (MCF), initiatives 190, 191  
 mobile content services 6, 89–91  
   premium rate 91–5  
 Mobile Network Infrastructure Code 127, 134  
 mobile networks 3, 71–5  
   CDMA networks 3, 71, 72, 73, 74  
   drop-out and congestion 86–7  
   GSM networks 3, 4, 71, 72, 73, 75  
   network development 72–5  
   network evolution 71–2  
 mobile number portability 4, 199  
 Mobile Number Portability (MNP) Code 125, 128,  
   132–3, 199  
 mobile numbers, allocation 4, 194  
 mobile originating location information (MOLI) 181–2  
 mobile phone handsets 4, 76–7  
 mobile phone services 3, 4, 25, 69–97  
   access for people with hearing or vision  
   impairment 87–9  
   carriage service providers 79  
   complaints to ACCC 49  
   complaints to TIO 85–6  
   data applications 79  
   growth 1, 3, 25, 70  
   impact of capped pricing plans 25  
   market share 77–8  
   MMS messages 3  
   network expansion and satellite phone subsidies 83  
   outcomes for consumers 80–9  
   penetration rates 4, 70–1  
   pre-paid and post-paid accounts 4, 81  
   price movements 82–3  
   remote Indigenous communities 163–4  
   SMS message use 3, 79–80  
   text applications 79–80  
 mobile phones  
   lost and stolen 95  
   recycling 97  
   social impact 95–6  
   use in schools 96  
 mobile satellite services 73  
 mobile service resellers 79  
 mobile virtual network operators 79  
 Mobinet Index # 7 (AT Kearney) 79

**N**

- National Broadband Strategy 114–15
- National Broadband Strategy Implementation Group (NBSIG) 115
- national interests 175
  - emergency call service 175, 176–82
  - Integrated Public Number Database 41–2, 184–5
  - provision of assistance to law enforcement and national security agencies 183–4
- National Relay Service 51–4, 87, 88, 180
  - funding 53
  - performance 53–4
  - trends in usage 52–3
- network codes, compliance with 132
- Network Fault Management (code) 135
- Network Performance Code 127, 132
- Network Reliability Framework (NRF) 149–51
  - level 1 – national and field service area performance 149–50
  - level 2 – exchange service area performance 150–1
  - level 3 – individual service performance 151
  - remote Indigenous communities 161–2
  - review 145, 151
- new standard zone units 200
- NGN Study Group 125, 140, 141, 142
- nominated carrier declarations 10
- number allocation 5, 6, 11, 194–6
- number portability 11, 198–200
  - freephone and local rate numbers 199–200
  - local numbers 5, 198
  - mobile numbers 4, 199
- numbering for new telecommunication services
  - trial numbers 200
  - trial of 188 numbers 200
  - voice over internet protocol services 201

**O**

- Office of Federal Privacy Commissioner (OFPC) 37, 41, 42
- Office of Film and Literature Classification (OFLC) 92, 113
- online banking 106–7
- operational codes, compliance with 132–5
- Optus
  - 3G network 72
  - CSG connection performance 147
  - CSG fault repair performance 3, 147
  - CSG services 59, 60
  - mass service disruptions 148
  - mobile phone market share 77, 78
  - pre-paid and post-paid mobile customers 81

- Special Assistance Service 149
- supply of equipment to people with a disability 55
- USO levies 158, 159
- Optus Zoo, mobile content services 6, 90

**P**

- P2P networking 107
- Pacific Internet 117
- pair gain system, improvements in service 62–4
- pay TV services
  - broadcast of x-classified material from overseas 119
  - growth 1
  - industry structure and delivery systems 119
  - subscriber numbers 119
- payphones 153–4
  - in remote Indigenous communities 162, 169–71
  - fault repair performance 170–1
  - installation performance 170
  - numbers 5, 169
- peer-to-peer networking (P2P) 107
- people with disabilities, accessible telecommunications for 51–5
- people with hearing or speech impairment, access to mobile services 87–8
- people with vision impairment, access to mobile services 88
- phishing spam 117
- podcasting 107
- Pre-selection Code 128, 133–4
- premium rate internet access, Telstra withdrawal of 46
- premium rate mobile content services 91
  - chat room safety 94–5
  - content regulation 92–5
  - potential problems 94–5
  - protecting customers from high bills 91–2
  - restricted content 94
- premium rate services 47, 50
  - TISSC role 47
- Preventing Unexpected High Bills: Credit Management in Telecommunications* 39, 46
- price movements
  - fixed-line services 60–2
  - internet services 104
  - mobile phone services 82–3
- Prices, Terms and Conditions Code 118, 127, 131
- Primus
  - CSG connection performance 147
  - CSG fault performance 147
  - priority assistance 149
  - supply of equipment to people with a disability 55
- priority assistance 148–9
  - service providers' performance 149

Priority Assistance Code 135  
*Privacy Act 1988* 41  
 review 42  
 privacy and protection of personal information 41–2  
 complaints 41  
 proposed IPND standard 41–2  
 technological developments 42  
*see also* disclosure of customer information  
 provision of assistance to law enforcement and national security agencies 183  
 interception capabilities 183–4  
 obligations of carriers and carriage service providers 183

## Q

quality of service  
 CDMA WLL 63–4  
 fixed-line services 62–4  
 internet services 104–5

## R

racing tips software advertising (spam case study) 123  
*Radiocommunications (Compliance Labelling – Electromagnetic Radiation) Notice 2003* 189  
*Radiocommunications (Electromagnetic Radiation – Human Exposure) Standard 2003* 189  
 recycling, mobile phones 97  
 regional analysis, benefits from changes in telecommunications services 27, 29–30  
 regional and international standards making, consumer involvement 142–3  
 Regional Telecommunications Inquiry, recommendations implementation 62–3  
 registered cablers 5, 136  
 remote Indigenous communities 161–73  
 accessibility and take-up of telecommunication services 162, 171–3  
 Community Phones Program 161, 162, 163  
 data collection and monitoring of telecommunications needs and services 164–9  
 extended mobile phone coverage 163–4  
 fixed-line telephone services 161–2  
 government initiatives 162–4  
 payphones 162, 169–71  
 service provision 8–9  
 snapshot studies  
 Apatula region (Central Australia) 165, 166–8  
 Arnhem East (NT Top End) 165, 166, 168–9  
 telecommunications product and service trials 162–4  
 Rights of Use Codes 126

## S

satellite internet services 22, 23  
 satellite phone subsidy scheme 83  
 schools, use of mobile phones in 96  
 self-regulation 7, 125–43  
 industry codes 126–35  
 technical standards 135  
 SIMless phones 182  
 small business benefits from improvements in telecommunications sector 27, 28  
**smartnumbers**<sup>®</sup> 5, 11, 201–2  
 auction statistics and highlights 193, 202  
 benefits to industry and consumers 201–2  
 industry developments 202  
 international comparisons 202  
 SMS message services, complaints 86  
 SMS messages 3, 4, 79–80  
 spam 122  
 social impact of mobile phones 95–6  
 sound recordings, copyright infringement 107  
 South Australian Internet Association 127  
 spam 4, 7, 110, 111–12, 121–3  
 and Australian eMarketing Code of Practice 7, 118  
 case studies 122–3  
 consumer complaints 121–2  
 emails 7, 110, 112, 122  
 forensics tools 117  
 international cooperation 116  
 SMS messages 122  
*Spam Act 2003* 7, 111, 112, 118, 121–3  
 spam-filtering software 117  
 SpamMatters 117  
 special digital data service (SDDS)  
 obligation 154, 155, 156  
 fulfilment 156–8  
 spyware 110, 117  
 subscription television services 1, 4, 119

## T

Task Force to Coordinate Fight against Spam 116  
 Tasman-Global Telco model 26–7, 28  
 TCP/IP protocols 101  
 technical standards 135  
 Telecommunication Standardization Advisory Group 138  
*Telecommunications Act 1997* 1, 41, 126, 133, 183  
 Telecommunications Action Plan for Remote Indigenous Communities (TAPRIC), Community Phones Program 161, 162, 163  
*Telecommunications Code of Practice 1997* 188  
*Telecommunications (Consumer Protection and Service Standards) Act 1999* 43, 49, 50, 54, 152  
*Telecommunications (Emergency Call Person)*

- Determination 1999* 176
- Telecommunications (Emergency Call Service) Amendment Determination 2005* 181
- Telecommunications (Emergency Call Service) Determination 2002* 176
- Telecommunications (Equipment for the Disabled) Regulations 1998* 54
- telecommunications indicators, snapshot 4–5
- telecommunications industry developments 1–6
- Telecommunications Industry Ombudsman 37
  - complaints 4, 8, 43–5, 125
  - billing 86, 130
  - code breaches 128–30
  - credit control 8, 39
  - credit management 130
  - customer handling 131
  - customer transfer 131
  - fixed telephone services 5, 8, 57, 66–7
  - interim and alternative services 153
  - international internet dialler complaints 46
  - internet dumping 46
  - internet services 4, 108–9
  - mobile phone services 4, 85–6
  - prices, terms and conditions 131
  - privacy 41
  - membership 5, 9, 43
- Telecommunications (Interception) Act 1979* 183
- Telecommunications (Low-impact Facilities) Determination 1997* 188
- Telecommunications Service Provider (Mobile Premium Services) Determination 2005 (No. 1)* 86, 93
- Telecommunications Service Provider (Premium Services) Determination 2004 (No. 1)* 92
- Telecommunications Service Provider (Premium Services) Determination 2004 (No. 2)* 92
- telecommunications services changes, benefits resulting from 21–31
- Telecommunications (Standard Form of Agreement Information) Determination 2003* 8
  - review 35–6
- Telephone Information Services Standards Council (TISSC) 37
  - Code of Practice 47, 50
  - complaints 47
  - fair standards for content and advertising of premium rate services 47
  - self-regulatory scheme for mobile content service providers 93–4
- telephone sex services 49
  - complaints 50
  - use of 901 numbers and personal identification numbers 50
- teletypewriters (TTYs) 87, 88, 135
- Telstra
  - 3G network 71, 72
  - Access for Everyone package 38
  - as IPND Manager 184
  - CDMA mobile network coverage 74, 84
  - CDMA network upgrades 84
  - CSG connection performance 146
  - CSG fault repair performance 3, 146–7
  - CSG services 59, 60
  - Deed 2.7 (strategies for improving pair gain systems) 62–3
  - emergency call persons, performance 176–9
  - fixed-line services 59, 61–2
  - GDDS obligation fulfilment 155–6
  - interim and alternative service audit 153
  - Low-Income Measures Assessment Committee (LIMAC) 37–8
  - mass service disruptions 148
  - mobile content services 6, 90
  - mobile phone market share 77–8
  - Network Reliability Framework 149–51
  - payphone services 153–4
  - pre-paid and post-paid mobile customers 81
  - priority assistance services 148
  - SDDS obligation fulfilment 156–8
  - service to remote Indigenous communities 9
  - supply of equipment to people with a disability 54
  - supply of interim and alternative services 152–3
  - USO eligible revenue 11, 158
  - USO levy receivable 159
  - USO Standard Marketing Plan 152
  - withdrawal of premium rate internet access 46
- terrestrial mobile networks 73–5
- TextLink 9100M text telephone modem 87
  - 3G service networks 71–2
- Tower Sanity Alliance (TSA) 190
- TransACT Communications 147
- trial certificates 10



**U**

- Unconditioned Local Loop Service (ULLS) Code 102, 127, 132
- Unfair Practices and Telecommunications Consumers* 34
- unfair terms in consumer contracts 34–6
- Universal Music v Sharman Networks (2005)*  
FCA 1242 107
- universal service obligation (USO) 54, 152–4
  - eligible revenue 11, 158–9
  - funding 158–9
  - interim and alternative services 152–3
  - payphones 153–4

**V**

- VDSL 102
- video downloads 6, 90
- Vision 20/20 project 6, 13–19
  - key findings 13–14
  - regulatory challenges 16–19
  - emerging developments 17–18
  - issues of interest to ACMA 18–19
  - key uncertainties 15
  - strategic landscape 14
- Vodafone
  - 3G network 72
  - compliance with MNP Code 133
  - mobile phone market share 77, 78
  - pre-paid and post-paid mobile customers 81
  - USO levies 158, 159
- Vodafone Live! 6
- voice over internet protocol (VoIP) services 6, 108
  - numbering 201
  - regulatory implications 6

**W**

- WCDMA network 71–2
- weblogs 108
- Western Australian Internet Association 127
- wikis 108
- wireless broadband networks 2, 102
- Wiring Rules Standard 137
  - ACIF review 138
- WLANs 102
- Working Group on Internet Governance (WGIG) 113
- World Telecommunication Standardization Assembly  
125, 138, 139–40
- World Trade Organization 139