

Australia

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.AM

Overview

Australians sometimes call their land the “lucky country”, and many of the nation’s 19.8 million¹ citizens are right to feel fortunate. On average, Australians enjoy one of the highest standards of living in the world and, despite the regional economic downturn, the economy continued to grow strongly throughout the late 1990s, outstripping that of the USA according to many indicators.²

Australia is a very old, stable land mass and is comparatively flat, with the highest point being Mount Kosciuszko, at 2,228 metres.³ The smallest continent and the driest (apart from Antarctica),⁴ Australia is the world’s largest island, with an area of approximately 7.7 million square kilometres.⁵ Its ocean territory is the third largest in the world, including areas from “three oceans and covering around 12 million square kilometres”.⁶ The Commonwealth of Australia was formed upon the federation of a number of separate British colonies in 1901 and comprises six states (New South Wales, Victoria, Queensland, Western Australia, South Australia, Tasmania) and two territories (Australian Capital Territory, Northern Territory).

Although relying heavily on irrigation and modern farming methods to produce food, since only 6 percent of the land mass is naturally arable,⁷ Australia is a net exporter of agricultural products, as well as one of the globe’s largest exporters of minerals, metals and fossil fuels, with commodities accounting “for 57 percent of the value of total exports”.⁸ The combination of the aridity and age of the continent means the environment is very fragile, and European settlement and land use have threatened the long-term sustainability of large areas of the country. “Extraction from groundwater supplies for dryland agriculture has resulted in the water table rising significantly, bringing salinity with it.”⁹ Given the environmental costs, contemporary farming practices are under review. Many city residents also face inconvenient (rather than lifestyle changing) water restrictions after three years of severe drought. Even so, the nation’s natural resources, combined with a tiny population given the land mass, have helped Australians enjoy a highly privileged standard of living.

By definition, non-indigenous Australia consists entirely of settlement communities. Contemporary Australia prides itself on its cultural diversity, providing a “home to people from more than 140 countries [with] an enviable international reputation for its diversity and tolerance”.¹⁰ This reputation has been severely threatened in recent years by the racist politics of Pauline Hanson (now in clear political decline), by the Tampa

“incident”, by the subsequent “Pacific solution” applied to asylum seekers arriving by boat, and by the mandatory imprisonment of asylum seekers in “detention centres”.¹¹ UNESCO investigated Australian migration policies in the mid-1990s,¹² but in 1996 the Australian government abolished the Bureau of Immigration, Multicultural and Population Research, “leading to a considerable reduction in Australia’s migration research capacity”.¹³ This means, in part, that less relevant statistical information is available than ten years ago.

Approximately half of Australia’s population was born overseas or has a parent born overseas,¹⁴ and the policy of multiculturalism is recognised and celebrated by the vast majority of Australians. It has specific expression in some of the country’s major media organisations, including the government-funded Special Broadcasting Service,¹⁵ “the voice and vision of multicultural Australia”. Migrants often keep in close contact with their families of origin and their countries of origin; and the communication networks between Australia and the rest of the world tend to be very good, limited only by the telecommunications infrastructural characteristics of the other countries. Within Australia, however, the “tyranny of distance” has meant that many Australians living in remote areas have only recently received media, communications and information services and technologies taken for granted by most of the developed world. For example, many remote towns and settlements first received broadcast television only in the mid-1980s, following the launch of Australia’s domestic satellite. Further, people in remote areas have the greatest reliance on a good communications infrastructure, but the telecommunications services there are much worse than those in the city. This affects both voice and data transmission, which will be further investigated later.

Content

Content generation is taken here as referring to the production of communication, information, media and entertainment goods. OECD measured the generation of multimedia content per million inhabitants in June 2000. According to this criterion, “Australia is one of the leading nations ranked third in the world behind the US and Sweden”.¹⁶ Australia operates a mixed economy in terms of media production and consumption. This term is used to indicate a mix of sectors in terms of a political economy of the media: commercial, public service and

community-based. Political economy means that media and information products offer value to, and circulate within, a range of political contexts. News and current affairs information is carried by all elements of the media.

News and current affairs

Commercial media are run to create profits for corporations and shareholders, and they also contribute to the operation of Australia's free market economy by being a vehicle for advertisements and commercials for other consumer goods and for government, non-government and charitable communication campaigns. Mass media newspapers and magazines are all produced through the commercial sector, and there are three commercial television stations in each state capital city and a significant number of commercial radio stations. Although magazines are often niche media concerning hobbies and passions, some concentrate on news and current affairs, including *Business Review Weekly*¹⁷ and the *Bulletin*.¹⁸ Most magazines and the major daily newspapers have websites and digital services.¹⁹

Public service broadcasting includes the Australian Broadcasting Corporation (ABC) and the Special Broadcasting Service (SBS). Both see themselves as being obligated to present a news service that is free to report objectively on corporations and big business. (The commercial sector's reliance on advertising revenue may mean that ABC and SBS are uniquely positioned to do this.) These broadcasters create and circulate radio,²⁰ television and online content. SBS Radio broadcasts in 68 languages every week, and "independent surveys of the largest language groups show that for the majority, SBS Radio is their main source of news and information".²¹ Online services are also offered by SBS²² and ABC,²³ with ABC New Media (previously ABC Multimedia) developing content since 1995. ABC's overseas radio service, Radio Australia,²⁴ dubs itself "your Asia Pacific network" and broadcasts on the web in a range of languages.

Although ABC and SBS are mainly funded out of taxation (SBS raises some revenue – about 10 percent – through advertising and sponsorship), the government does not control the programming or the editorial policy. Instead, boards of directors run the two organisations and determine the best policies to be followed to achieve the organisational objectives. Charters regulated by relevant Acts of Parliament govern both ABC²⁵ and SBS²⁶ and guarantee editorial independence. A protection against overt political interference, charters do not altogether prevent pressure upon the institutions. Government ministers in the past have been particularly critical of perceived "left wing" bias by (especially) ABC, and opposition parties have accused the government of political motivation when ABC faced budget cuts and of interference in the broadcasters' affairs in terms of board appointments.

Australia facts

- Total population:** 19,800,000²⁴⁵
- Rural population as a percentage of total population:** 14% (Census)²⁴⁶
- Key economic sectors:** Service and information industries (77%)²⁴⁷
- Literacy in the national language(s):** 80%²⁴⁸
- Literacy in English:** 80%
- Computer ownership per 100 inhabitants:** 25.6 (67% of households own or lease a PC,²⁴⁹ or 2.6 people per household)
- Telephone lines per 100 inhabitants:** 37 (97% of households have a fixed telephone line,²⁵⁰ or 2.6 people per household)
- Internet hosts per 10,000 inhabitants:** 0.4 ISPs per 10,000 inhabitants²⁵¹
- Internet cafés/telecentres per 10,000 inhabitants:** 0.6²⁵² (but mainly in remote areas, and 57% of the population over 16 has access to the Internet at home)
- Internet users per 100 inhabitants:** 72.5²⁵³
- Cell phone subscribers per 100 inhabitants:** 64²⁵⁴
- Number of websites in the national language(s):** Approximately 300,000 registered ".au" domain names²⁵⁵
- National bandwidth within the country:** 124 Kbps (remote) to 10 Gbps (metro)²⁵⁷
- National bandwidth to and from the country:** Approximately 125 Gbps activated capacity²⁵⁸
- Ratio of incoming and outgoing Internet traffic volume:** 70% (about 49% total traffic outgoing, 21% incoming, 30% domestic)²⁵⁹

Sources:

See Notes.

Community-based broadcasters hold community licences. This means that the radio and television stations concerned are run by community organisations with a requirement that they provide "local" programmes. This includes local news and current affairs in a variety of languages representative of the mother tongues of local ethnic and cultural groups. Community broadcasters support "principles of independence in programming, diversity of output, access to broadcasting by the community, the widest representation of viewpoint to give the fullest expression to the aspirations and culture of the Australian people, [and]

diversity in the organisation and structure of broadcasting and co-operation between community broadcasters".²⁷ Few community broadcasters have the resources to offer online services.

Education

ABC New Media has a dedicated link to educational resources covering school through to lifelong learning²⁸ and also links to the Education Network Australia.²⁹ The latter has resources and entry points for school education, higher education, vocational education and training, adult and community education, education training and providers, and international education. As well as offering support for educational programmes and activities, the education sector in Australia is one of the major ways in which children learn about and become familiar with the digital environment.

Over half of Australia's children (57 percent in September 2000)³⁰ access the Internet from school, and their keenness to use digital resources is a major driver for domestic purchase of Internet technology. The "recency" effect of educational access may also be reflected in age group related use of the Internet from any site (home, workplace, library, kiosk, etc.). These statistics indicate that 74 percent (18–24 year olds), 64 percent (25–39 year olds), 52 percent (40–54 year olds), 19 percent (55 year olds and over) accessed the Internet in the 12 months before November 2000.³¹ For schools with active IT policies, Internet use is a common feature of homework tasks and one reason why couples with children have a higher rate of home Internet access (51 percent) than couples without children (27 percent). Single parents with children, who are generally poorer than couples, had 26 percent access.³²

Most Australian children attend schools with online facilities and, at the end of the 1990s, 15 percent (2,000,000 people) of the adult population accessed the Internet through public libraries or via tertiary education providers.³³ As well as requiring adult students to use the Internet for research and learning, post-secondary educational establishments are major creators of online content using web-based material to support classroom learning and to create distance education material for students in rural and remote locations and for those seeking flexible delivery of learning material. In May 2002, the National Office for the Information Economy released a special report on *eBusiness in Education*,³⁴ using a case study approach, which offers up-to-date snapshots of practice.

Agriculture

"Precision agriculture", such as that reported by the Grains Research and Development Corporation,³⁵ is gaining momentum in Australia. Farmers use satellite technology to create site specific crop management plans for their paddocks. These programmes create maps – looking like

coloured contour maps – that chart the specific variations in the paddock. This knowledge of soil attributes, etc., indicates the planting patterns for the fields and is also used to check crops as they grow. Information as diverse as the height of the crop, the protein in the crop and the amount of weeds can be used to determine the variable application of fertiliser, pesticide and irrigation. The satellite-linked maps of the fields allow poorer areas to get the amount of attention and nutrients they need to maximise crop yields without wasting resources by spreading them where they are not required. Once the digital information about the crop and the field are programmed into the tractor, the crop can be tended semi-automatically (night or day) with the satellite tracking system capable of identifying the whereabouts of the machine in the paddock within a couple of centimetres.

The Australian Bureau of Statistics has detailed relevant information about farms in the past,³⁶ although some of this information is now a little dated.³⁷ At that time, however, "farms were more likely to be online the higher their estimated value of agricultural output".³⁸ This may not be surprising given the information-intensive nature of contemporary agribusiness.

Rural development

In 1999, country areas were less likely to have access to the Internet at home than were city areas, with a ratio of 24:36,³⁹ although by November 2000 40 percent of metropolitan households had Internet access at home compared with 32 percent of households in "other areas".⁴⁰ However, as part of a response to rural and remote complaints about comparative lack of access to affordable online connections, the federal government has funded a number of initiatives. These include the Networking the Nation⁴¹ project, the BARN programme (Building Additional Regional Networks), A\$150 million for an Untimed Local Calls project, and a New Connections rural and regional portal.⁴² The relevance of "untimed local calls" is that city-based residents can make local telephone calls (and get Internet access) at a flat rate, while country residents had to pay by the minute at STD (standard trunk dialling) rates.

These initiatives are responses to a demand from country areas for more equitable treatment of businesses and citizens in regional, rural and remote Australia. The perception of inequality in access was reinforced by a Telecommunications Service Inquiry,⁴³ which reported in September 2000, with a government response in May 2001. The argument is that, given the dependence of the nation upon the wealth generated in the mineral and agricultural sectors (both of which are country-based), barriers to people in rural and remote Australia participating in the information economy should be lessened or removed. Although this is a long-standing issue (most of remote Australia did not get a private telephone until the mid to late 1980s), the argument became fiercer when the government decided to privatise (i.e. offer

for public sale on the stock exchange) the national telecommunications carrier, Telstra. Previously, this communications giant was entirely owned by the government (on behalf of the citizens), and country people feared that a move to semi-private ownership would harm the interests of remotely located citizens, who may be very expensive customers to service. The government promised to use some of the money raised through the part sale of Telstra to achieve social and economic benefits in remote and regional areas, including telecommunications and mobile phone infrastructure and the establishment of extra Internet access points (reducing STD liabilities). Rural communities are still concerned about the implications of a possible full sale of Telstra, however, and this remains politically sensitive.

Among a range of other services, the government website for the Department of Transport and Regional Services (DoTaRS)⁴⁴ links interested visitors to Commonwealth Regional Information Services,⁴⁵ the Foundation for Rural and Regional Renewal,⁴⁶ “Regional Entry Point: Easy Access to Commonwealth Government Information”,⁴⁷ the Regional and Rural Women’s Unit,⁴⁸ and a policy statement by the DoTaRS minister – *Stronger Regions, a Stronger Australia*⁴⁹ – that includes an initiative to help develop sustainable regions.⁵⁰ This latter initiative is particularly important to regional residents since census returns and surveys have consistently shown a decline in the number of Australians living outside the towns and cities, with the rural population declining from 14.7 percent to 10.9 percent between 1986 and 1996.⁵¹

Industry and business

A recent study by the Allen Consulting Group indicates that 95 percent of Australian businesses are connected to the Internet and some 72 percent have an established web presence. Further, it suggests that “online revenue of Australian companies in 2001–2 contributed \$43 billion, or the equivalent of 6.4% of Gross Domestic Product, to the Australian economy. This represents a 43% increase over the previous financial year”.⁵² In terms of an online commentary on Australian businesses, the *Australian Financial Review* is the only national daily paper dedicated to coverage of business and finance and it has an excellent website.⁵³

The commonwealth government, which is responsible for funding many tertiary sector expenses, is keen to encourage industry to work with universities. One strategy for this is the Australian Research Council (ARC) Linkage programmes. These projects allocate money in the form of three-year doctoral scholarships called Australian Postgraduate Awards (Industry). Allocation of these funds is effectively by competitive tender, and universities with industry cash and in-kind backing put forward their projects for consideration by the Expert Advisory Committees. A list of Linkages projects funded for 2003 is available on the

ARC website.⁵⁴ Over 100 projects were funded in information, computing and communication sciences and in engineering and technology.

OECD’s *Communications Outlook*⁵⁵ reported, “The level of Business-to-Consumer (B2C) activity as a proportion of annual GDP provides a measure of the economic significance of electronic commerce within the economy at large. In 2001, among benchmarked countries the US had the highest estimate of B2C as a proportion of GDP (0.7 percent)”, whereas Australia was sixth, with 0.17 percent. Australia and Singapore were joint fourth in terms of B2B activity as a percentage of GDP, with 1.1 percent each (after the USA, Taiwan and Sweden).⁵⁶ “In May 2001, the US-based Economist Intelligence Unit (EIU) published its second set of *E-business Readiness Rankings* for over 60 countries. Australia was placed second to the US, up from its sixteenth place ranking in May 2000.”⁵⁷ Taken together, these figures indicate that industry/business application of the Web is progressing much as the government policy makers might have hoped!

Health and nutrition

The Department of Health and Aging⁵⁸ distributes a range of health and nutrition information for access by individuals. This includes health and safety information, health-care card details (a welfare scheme for the socially disadvantaged allowing access to cheap medicines and health-care, among other benefits), immunisation information, material on private health insurance and quality health information (Health Insite).⁵⁹ This latter site offers a “consumer guide to health” and includes areas concerning lifestyle, conditions/diseases, life stages/events, population groups and expert views. Emotional health is included in this list, and the Health and Aging homepage was one of the major sites for disseminating information about the Bali bombing, such as contact numbers for worried families and friends as well as details of special social security payments for the injured and bereaved.

In terms of nutrition, there are sections in Health Insite regarding diet and obesity, food and nutrition, and sports, exercise and fitness. Following the links on the food and nutrition section⁶⁰ leads to further links on foods, diet and health conditions, family nutrition, and food safety and key nutrients. It is at this deeper level that the policy documents are made accessible. Thus, family nutrition links to dietary guidelines for Australians, the Australian guide to healthy eating, nutrition publications, and dietary guidelines for children and adolescents. It also offers further links to infant feeding and information relating to “eating well” for children and young people.

Apart from this custom-produced content, there are links to other relevant sites, some of which are government funded. The National Health and Medical Research Council (NHMRC)⁶¹ is the government vehicle for funding health

and medical research (in addition to the research carried out by charities, hospitals, universities, etc). One paper published by NHMRC and linked to the family nutrition website (along with a further 26) is a February 2000 contribution entitled *New Dietary Guidelines for Older Australians Confront Life and Death Issues*.⁶² It gets attention by claiming that “a staggering 50% of the deaths of older Australians aged 65 to 69 are diet-related”.⁶³

Technology

In the same way that educational institutions teach and provide access to digital technologies, so government policy tends to drive R&D of specific areas of technology. For example, in 2001 the Department of Communications, Information Technology and the Arts (DCITA) announced additional resources to fund an extra 2,000 university places in IT, computer science, software engineering and telecommunications.⁶⁴ This initiative represented part of the government’s Innovation Action Plan: *Backing Australia’s Ability*.⁶⁵ The aims of this initiative include helping to generate ideas and research, to develop and retain relevant Australian skills and to find ways to commercialise research. However, undergraduate programmes are only part of the strategy to leverage a “clever country” approach to technology, and this is further encouraged by government funding for postgraduate research (see the section “Research into ICTs” below).

Government

There are three levels of government in Australia: the federal (or commonwealth) government, located in the Australian Capital Territory; the state or territory governments, located in the capital city of each state or territory; and the shire, city or local government⁶⁶ bodies. The federal government is concerned with digital, online and industry policy and funding. Both lower house members (the House of Representatives) and upper house members (the Senate) can hold portfolios and be ministers. The Parliament of Australia has an official website.⁶⁷

This “.au” chapter is particularly concerned with information relevant to DCITA which includes the National Office for the Information Economy (NOIE) and many specific Internet- and IT-related initiatives, such as the Online Council,⁶⁸ which was established in 1997 to promote consistency and cooperation relating to online issues at all levels of government. The Department of Education, Science and Training⁶⁹ has the educational network and the *Backing Australia’s Ability* policy. DoTaRs has a range of information concerning digitisation and regional and remote communities, whereas the Department of Health and Aging offers information on health and nutrition.

According to NOIE, there were 1,200 public Internet access points as at September 2001.⁷⁰ “Federal Government

agencies are moving from the first phase of electronic service delivery to the era of genuine e-Government with a wide array of services available online,” claims a media release of that time, “and this is being matched by the establishment of an ever increasing number of public Internet access points – at telecentres, libraries, schools and wherever Australians undertake everyday activities.”⁷¹

NGOs

Australian society makes significant use of the statutory authority, a body set up by Parliament but independent of it (insofar as independence is possible when funding is – at least partially – reliant upon government support). The two national public service broadcasters, ABC and SBS, are both statutory authorities, as is the Australian Broadcasting Authority,⁷² which is charged with regulating online material and commercial broadcasting.

As Trevor Barr (2000) made clear, the defining characteristic of the burgeoning digital content industry in Australia is the alliance between the “old” media companies (e.g. Fox and the Nine Network), IT leaders (e.g. the Microsoft Network) and telecommunications carriers (e.g. Telstra). This dynamic of convergence is delivering a wide range of online content and continues to indicate signs of innovation. A range of NGOs relate to digital media, including the Internet Industry Association,⁷³ Digital Broadcasting Australia⁷⁴ and the Australian Computer Society.⁷⁵

Political groupings

Parliamentary elections at state and federal levels are based on the Westminster system of democracy, with adversarial debates between parties. Historically, the two major political groupings are the Labour Party⁷⁶ and a coalition of the Liberal⁷⁷ and National⁷⁸ Parties. Minor parties include the Democrats⁷⁹ and the Greens.⁸⁰ Minor parties are more likely to get members elected to the Senate, where a system of proportional representation helps ensure that a wider variety of views get represented.⁸¹ Parliamentary debates can be followed live on the Internet or via NewsRadio,⁸² one of the ABC radio stations. The Parliament follows a restricted pattern of sittings, and parliamentarians are expected to spend significant time in their constituencies helping their constituents as well as representing their interests in Canberra.

Pressure groups are particularly relevant to this style of democracy. They represent the interests of specific segments of the population. Thus, the Australian Council of Trade Unions⁸³ represents the 2.5 million Australian workers who are union members; the Australia Conservation Foundation⁸⁴ and the Australian Wilderness Society⁸⁵ work professionally and politically to protect and defend the natural environment; and the Australian Council of Social Service⁸⁶ works to

promote social justice and to enhance the well-being of the poor and the socially disadvantaged. Organisations such as these operate to raise public awareness of issues they see as critical to the future development of Australia and work to support policy that helps rather than hinders the causes they espouse. The generation of online content and the use of public relations to set the agenda in mainstream media (called “spin doctoring”⁸⁷) are common strategies used by pressure groups.

Civil society

A civics education site is included in the Parliamentary Education Office⁸⁸ section of the Australian Parliament website. The site provides links to a number of resources – including some from overseas – mainly for use by students and teachers. Civnet⁸⁹ is a US-based international organisation and its resources link includes material for advocates, as well as for teachers and students. The Common Good,⁹⁰ on the other hand, is predominantly Australian material, hangs off the ABC/civics website and includes links to a range of broadcast material.

In general terms, Australian democracy sees civic responsibility as a balance between the rights of the individual and the good of society, where the good of society is constructed as being best served where the rights of the individual are fully protected. This means that behaviour that might be unacceptable in many other societies (such as objectionable racist statements that stop short of an incitement to harm others) is legal. The civil libertarian response to such views is, “I hate every word you say, but I defend your right to say it.” In part, this approach reflects the historical application of British Common Law principles in Australian society. “In the public interest” is a phrase sometimes used to encapsulate this approach, such as: “It is in the public interest to allow freedom of speech”.

Australia also operates a welfare state safety net to protect poor and disadvantaged citizens. This means that there are social security payments for the ill, the disabled and the unemployed. There is currently also debate about the introduction of paid maternity leave. The overarching idea is one of inclusiveness: no person should feel so disadvantaged in Australian society that their personal circumstances make it impossible for them to participate in civic life. This approach has also led to concepts such as minimum service provision and community service obligation, which have been used as drivers to get telecommunications technologies and services into remote areas of Australia. Thus, the 1980s saw the development of a belief that citizens were entitled to a minimum service provision of access to a telephone line and radio and television services. This meant that Telecom Australia (a forerunner of Telstra) had a community service obligation to provide affordable telephony to the rural areas and ABC had a community service obligation to ensure that its

programming could be delivered by satellite. Latterly, the idea of the welfare state has shifted somewhat to include the concept of mutual obligation, whereby the government may be obliged to provide the necessities of life for the poor and unemployed, but the poor and unemployed are “mutually obligated” to work to improve their circumstances, with a view to gainfully participating in the labour market.

Political perspectives influence the civic philosophy of Australian society. As the ideals of liberalisation (deregulation and the breaking up of monopolies, such as Telecom Australia) and privatisation (the sale of publicly owned assets, such as Telstra, to private investors and institutional shareholders) gained sway in the late 1980s, so it became in the public interest to allow market forces to dictate the services available to consumers. Some argue that this means that the concept of the citizen, with a range of rights as a result of their role in civic society, has been overtaken by the concept of the customer, who has the money and resources required to consume goods and services at a price determined by supply, demand and the market. Community service or customer focus? The debate – and the swing of the pendulum – is likely to continue.

Culture and literature

There are websites devoted to all major cultural and literary organisations in Australia and, in addition, the ABC online site⁹¹ offers linked information as a resource to support their arts and culture⁹² reporting and commentary. ABC and SBS are themselves major cultural institutions; while the commercial television stations are very important to the circulation of popular culture, especially Channel Nine (owned by Kerry Packer) since it is an implicit part of the ninemsn.com⁹³ website, a joint venture between Nine and the Microsoft Network. (Possibly consciously paralleled by Foxtel Pay TV,⁹⁴ a joint venture between Murdoch-owned Fox and Telstra.) Certainly, there are signs that the old media barons, Kerry Packer and Rupert Murdoch, are keen to forge new media alliances in the culture and arts areas.

The key site for the arts in Australia, however, is the Australia Council.⁹⁵ As well as offering resources in terms of policies and information regarding – programmes such as: arts in a multicultural Australia; – arts and disability; – and national Aboriginal and Torres Strait Islander arts, – the council also offers general support for the arts communities. The literature link carries through to information about presentation and promotion, skills development and fellowship applications, for example. When taken alongside the abc.net.au/arts link to reviews of books and interviews with authors, the two sites offer a significant insight into literature in Australia.

DCITA is the policy and government body for arts and culture and offers a dedicated link to this area on their website.⁹⁶ There is a culture and recreation portal showcasing a range of information from around the country and overseas

Australia's Indigenous peoples

Across a range of indicators, the profile of indigenous Australians demonstrates that population differences within a country can mirror the great differences between countries. Australia's indigenous people – Aboriginals and Torres Straits islanders – are less likely than many other Australians to share the employment, income, housing and health benefits of development.²⁶⁰ For most of the 215 years since European settlement of their continent (1788), the indigenous population has been declining in number “under the impact of new diseases, dispossession and cultural disruption and disintegration”.²⁶¹ Recently, this situation appears to be improving, although it is hard to be certain since the first census to include the indigenous population was in 1971, following a referendum in 1967 that “ended constitutional discrimination”.²⁶² “In the last 20 years, changing social attitudes, political developments, improved statistical coverage and a broader definition of indigenous origin have all contributed to the increased number of people identifying themselves as being of Aboriginal and Torres Strait Islander origin”,²⁶³ and the indigenous population is currently about 420,000, from a baseline of approximately 300,000 in 1788. Even so, “available data shows that life expectancies in 1992–4 for Aboriginal and Torres Straits Islander men and women were 15–20 years below those of other Australians”.²⁶⁴ Although

many people of all ethnic backgrounds are working hard to remove the horrific gap between the life expectancies of indigenous and non-indigenous Australians, progress is slow.

The new media cultural achievements of some indigenous Australian individuals and communities make a striking contrast to this picture of disadvantage. CAAMA, the Central Australian Aboriginal Media Association, “produces media products that engender pride in Aboriginal culture, and informs and educates the wider community of the richness and diversity of the Aboriginal peoples of Australia”.²⁶⁵ When tenders were called in the early 1980s for media organisations to operate a remote commercial television service for the Central Australian satellite footprint, CAAMA helped create *Imparja*,²⁶⁶ the successful bidder, and it remains a major shareholder. One specific community, the Warlpiri at Yuendumu in the Northern Territory, has been involved for over 20 years in the production and direction of multimedia and broadcast projects.²⁶⁷ They have also instituted an internationally relevant dialogue with “mainstream” media about the responsibilities of journalists who report on elements of indigenous culture.²⁶⁸ In the early 1990s, they helped set up the Tanami satellite-based videoconferencing network linking a number of remote and urban sites of specific relevance to the Warlpiri people.²⁶⁹

and including reference to AMOL, Australian Museums and Galleries Online.⁹⁷ Further, the Australian National Library⁹⁸ offers a gateway to more than 5,400 state, territory and local collections⁹⁹ and a dedicated link to Chinese, Japanese and Korean resources held in Australian libraries.¹⁰⁰ An early result of the Creative Nation initiative, the *Australia on CD* series is getting a little dated now but is interesting as an initiative that kick-started cooperative multimedia development in the nation. A range of arts-related websites is included in the select bibliography, and the sidebar on Australia's indigenous peoples offers examples of Aboriginal media productions, as well as indicators of the disadvantages faced by many indigenous Australians in comparison with the wealth of the nation as a whole.

Commerce and tourism

Commercial information on trading opportunities with Australia is collected on the AUSTRADE (the Australian Trade Commission) website¹⁰¹. The site offers some powerful research data relating both to industries in Australia and trading partners overseas: “If you select an industry only, the information will be an overview of that industry in Australia. If you select a country only, the information will be a profile of that country. And if you select both an industry and a country, the information will be specific to that industry in the selected country”.¹⁰² Australian Business Limited also offers a useful non-government-related website.¹⁰³ The continuing growth of the Australian economy, in the face of a global recession, means that there remains an upward pressure on imports and a declining trend in exports, leading to a continuing current account deficit.¹⁰⁴

Tourists make a significant investment when they choose to visit an isolated country like Australia, and they tend to stay some time. The Australian Tourism Commission (ATC)¹⁰⁵ website offers access to information about the volume of tourism and the characteristic spending and other patterns of tourists to Australia. This data shows that, in common with the rest of the world, Australian tourism was badly hit in the wake of the 11 September 2001, terrorist attacks on the USA. In the 12 months to end August 2002, there were 4.7 million visitors¹⁰⁶ (a decrease of 7 percent on estimates for the year). However, the website still forecasts overall growth in tourism, possibly reaching 10.4 million people per year over the next decade. International visitors were estimated to have contributed A\$7.6 billion¹⁰⁷ to GDP in 2000–2001. In addition to the federally funded ATC, states and territories have their own tourism offices promoting internal tourism and helping their region compete with others for the attention of overseas visitors.

Important local sources of content

Australia has a strong commitment to producing local content. Most clearly evident in the regulation of the film¹⁰⁸ and television industries,¹⁰⁹ this philosophy was an important policy driver for the early development of Australia's interactive multimedia industry. "Creative Nation" was the 1994 cultural policy statement which drove local content production into the digital realm: "If, as a nation, we can create a vibrant multi-media industry, we will go a long way to ensuring that we have a stake in the new world order yet retain a distinctly Australian culture."¹¹⁰

The impetus for creating local content is the historical relationship with the UK (as a former colony) and the language link with the USA, which translates into significant volumes of US products on television and cinema screens (e.g. only 4.5 percent¹¹¹ of box office takings in Australia in 1998–2001 were for Australian films). Given that the public service broadcaster ABC was initially conceived along the lines of Britain's BBC, much of the foreign material screened on ABC is British; contrariwise, commercial television services tend to screen US-produced material. Channels 7, 9 and 10 are obliged, however, to reach minimum proportions of local content production and screening to ensure that Australian stories and culture circulate in the public domain, and resident creative and craft specialists obtain work in their own industry.

Most of the websites referred to in this chapter are indigenous in the sense that Australians produce them in Australia, and they make a valuable contribution to the development of the knowledge economy and the circulation of Australian cultural products. (Content produced specifically by indigenous Australians is highlighted in the sidebar on Australia's indigenous peoples.)

Online services

Almost any business that exists in the "real world" is available online in Australia. In particular, banking, government services, education and information services dominate the service sector of the online environment. Commercially, in the year ending November 2000, about 10 percent of Australia's adults made private purchases online, compared with about 4 percent in the previous year. Most people (82 percent) purchasing over the Internet also paid online.¹¹² Even so, two-thirds¹¹³ of adult Internet use was for e-mail or chat sites.

The Australian Bureau of Statistics currently monitors business use of IT on an annual basis. They report that "the proportion of businesses with a Web presence has grown rapidly, rising from 6 percent in 1997–98 to 16 percent in 1999–2000 and 22 percent in 2000–2001. The proportion of businesses with Internet access has also risen rapidly, from 29 percent in 1997–98 to 56 percent in 1999–2000 and 69 percent in 2000–2001."¹¹⁴ Internet use is directly related to business size in this period with 99 percent of businesses employing over 100 people using the Internet as at July 2001.¹¹⁵

A government commitment to have all appropriate government services online by the end of 2001 saw 1,315 online government services (93 percent) available by March of that year. This level of achievement is reflected in Australia's e-government ranking; "ranked third behind the US and Taiwan for the proportion of its government websites conforming to assessment criteria based on the scope of information provided on agency websites, the clarity of the site, privacy and security policy, etc."¹¹⁶ In terms of the "peak penetration of online government services", Australia was also third (behind Norway, and Germany), where performance is judged by "the proportion of the adult home Internet population accessing government services online".¹¹⁷

ICT industries and services

The ICT sector contributed A\$76.5 billion in 1998–1999 (excluding radio and television) and constituted 3.9 percent of national GDP. At the same time, the communications sector¹¹⁸ contributed 2.9 percent to GDP, rising to 3.1 percent¹¹⁹ by mid-2000 (and trending upwards to an estimated 3.75 percent by mid-2003). Australia runs a deficit trade balance in ICT goods and services, however, with an estimated A\$10.9 billion gap in 1999–2000¹²⁰ and A\$16.8 billion in 2000–2001.¹²¹ Carriers, ISPs and other service providers shed staff (18.75 percent) between June 1996 (91,700) and June 1999 (74,500), while income in the sector increased by almost 40 percent over that period (to A\$26.1 billion in 1998–99) with labour productivity (gross sectoral income per person employed) increasing by 71.5 percent.¹²²

The late 1990s saw the deregulation of telecommunications in Australia with a number of new players

introducing services for the domestic and business markets across axes of local calls¹²³ long-distance calls¹²⁴ international calls¹²⁵ and Internet service provision. The number of ISPs is falling as an essentially “entrepreneurial” market matures. The sector is still characterised by takeovers and mergers. Telstra Big Pond, Optus and Ozemail are among the five biggest ISPs, accounting for 57 percent of Australia’s Internet subscribers in 2001.¹²⁶ Backing from media giants News Corporation (Murdoch) and Publishing and Broadcasting Limited (Packer) was insufficient to save telecommunications newcomer One.Tel, which collapsed in mid-2001 leaving four players in the mobile market: Telstra, Optus, Vodafone and Orange.¹²⁷ The price index for telecommunications services showed a 17.5 percent¹²⁸ decline over the 1996–1997 to 1999–2000 period, in research by the Communications Research Unit¹²⁹ for the Australian Competition and Consumer Commission.¹³⁰

Examples of innovative and key initiatives

The government tends to intervene in the development of the digital environment through promoting desired activities (such as making funds available for new directions) and removing barriers. The clearest example of the promotion of digital development, however, is the groundbreaking Creative Nation initiative, almost a decade ago in 1994. The key platforms of this policy, all backed by generous grants that attracted many more players than the government were prepared to finance, were:

the creation of the Australian Multi-media Enterprise [a business and marketing initiative]; the establishment of Cooperative Multi-media Development Centres [an education, software development and hardware support initiative]; the initiation of a series of national Multi-media Forums [to promote dialogue and debate]; the commissioning of CD-ROMs involving material from our major cultural institutions for Australian schools under the Australia on CD program [involving nationwide tendering for the six different titles]; and specific assistance to foster our film agencies’ move into multi-media [to help get old media involved in the new].¹³¹

The impact of Creative Nation was to make multimedia development the most exciting project available, with all key players jostling to form alliances between content providers, hardware and IT&T (IT and telecommunications) support, education, entertainment and government. These alliances leveraged creativity.

In the launch speech, the then Prime Minister, Paul Keating, set the tone for the policy innovation:

Not too many years ago, policy in respect of information, computing, telephony and broadcasting would have been seen purely in an industry or service policy context. The focus would have been on hardware and its application to the means of production and distribution. The emphasis was almost exclusively on efficiency and productivity. Today, information technology having advanced so rapidly offers a wide medium for the exchange of information and ideas. Text, graphics, sound and image can now be deployed to provide not simply data but concepts and understanding, creative elements that can expand horizons and devices that can engage the mind in contemporary activity.¹³²

This notion of a creative nation has gone hand in hand with the idea that Australia will be creative in producing specifically Australian products (for a world market) and in expressing and circulating the cultural perspectives of its citizens. Recently, the idea of a creativity index has been linked to competitive advantage in the 21st century.¹³³ Creativity is itself seen as a policy aim, and universities here are developing strategic alliances with content providers (media, publishing and entertainment organisations) and setting up faculties of creative industries.

An example of the removal of barriers centred on a fear of the Internet, especially concerning the existence of pornography sites, that inhibited some people from participating. In 2000, the majority of families with children already had access to the Internet from home.¹³⁴ However, one of the major reasons given in the late 1990s for not accessing the Internet was concern about unsuitable material that might disturb family life. The *Broadcasting Services Act*¹³⁵ was amended in 1999 to allow the Australian Broadcasting Authority (ABA) to regulate the Internet industry in Australia from 2000 onwards.¹³⁶ ABA regulation is carried out in response to specific public complaints, and the Internet industry is mainly self-regulated, operating codes of conduct¹³⁷ that, among other things, require the industry (ISPs) to offer a “scheduled filter” to customers, such as Net Nanny.¹³⁸ ABA also set up a “cybersmart kids”¹³⁹ portal to encourage safe and sociable Internet activity. By removing the concern about access to inappropriate content, the government provided an environment that encourages families with children to participate in the digital world.

Enabling policies

Equity and access have been important policy issues in Australia with regard to two populations in particular: the poor and socially disadvantaged (including indigenous people, Aboriginals and Torres Strait Islanders) and those living in rural and remote areas. The aim of most enabling policies is bridging the digital divide.¹⁴⁰ The key initiative that addressed this area (in tandem with Creative Nation)

was the Broadband Services Expert Group (BSEG) set up in 1993, which published in 1994 a report entitled *Networking Australia's Future*. A summary of the findings is available¹⁴¹ on the old Information Policy Advisory Council site,¹⁴² now part of NOIE. The government summary of the BSEG findings comments: "The report introduced the concept of 'universal reach', involving making services available to as much of the community as possible as quickly as possible (e.g. through community access points in schools and libraries), arguing that it was more appropriate than 'universal access' in the sense of providing everybody access as a fundamental right."¹⁴³

Even before BSEG, the Western Australian Telecentre Network was helping to provide universal reach. Based upon pioneering work in Scandinavia,¹⁴⁴ the telecentres arose from a desire to offer higher education opportunities to people living in remote areas. While distance education remains a major driver of this movement,¹⁴⁵ "within months it became evident that such a network could not only address educational needs, but provide a technology hub for a wide range of government and community services and programmes."¹⁴⁶ Since its beginnings in the early 1990s, the Australian telecentre movement has offered an international model for community-based access to ICT resources. A catch-all descriptor for these access points is the Multipurpose Community Telecentre, and while many communities can see the benefit in such service there is sometimes a major problem in ensuring their financial sustainability. Gail Short's¹⁴⁷ Western Australia case study offers a range of strategies that have proven successful in the Australian context.

This policy of extending the reach of the Internet through public educational and information resources (schools, libraries, telecentres) means that there has never been an enormous demand for Internet and cyber cafés in Australia. Recent figures from the Australian Bureau of Statistics¹⁴⁸ indicate that young people, in particular (58 percent of 18–24-year-olds), use resources "other" than home (43 percent) and workplace (26 percent) to access the Internet. NOIE estimated that there were 1,200¹⁴⁹ public Internet access points¹⁵⁰ by September 2001, including priority given to funding public access in remote and rural Australia.

People with disabilities have specific needs for IT but face access challenges. Self-help groups often provide excellent support services, and the resources¹⁵¹ provided by Women with Disabilities Australia¹⁵² are valuable for everyone. A recent book on the subject by two Australian authors, Gerard Goggin and Christopher Newell, *Digital Disability: The Social Construction of Disability in New Media*,¹⁵³ is likely to advance the debate. It offers a range of insights into how policy makers could better empower people with disabilities to liberate the potential of digital technologies. The book's coverage is international but it includes specific references to Australian case studies. It argues: "Interactive digital communications – such as the

Internet, new varieties of voice and text telephones, and digital broadcasting – have created a need for a more innovative understanding of new media and disability issues."¹⁵⁴ DCITA has a site dealing with access to telecommunications for people with disabilities,¹⁵⁵ and the Australia Council also offers special information regarding arts and disability.¹⁵⁶

Regulatory environment

Internet-related licensing

As the ABA Internet legislation website¹⁵⁷ explains: "The co-regulatory scheme for Internet content was established by the *Broadcasting Services Amendment Act (Online Services) Act 1999*,¹⁵⁸ which amended the *Broadcasting Services Act 1992*.¹⁵⁹ The main provisions of the scheme are set out in Schedule 5 of the *Broadcasting Services Act 1992*."

The concept of co-regulation is that industry is regulated "lightly", given principles to follow and access to examples of world-class practice. The "regulatory regime" becomes the public and user groups who contact the regulator (ABA for the Internet) when they feel that codes of practice have been breached or different practices should be followed. In this case, the Internet Industry Association¹⁶⁰ is the industry body responsible for liaising with ISPs and Internet content hosts (ICHs) to ensure that they contributed to the development of the self-regulatory framework. These codes were registered in May 2002 and are available for public scrutiny. Once in operation, the system is reactive rather than proactive. There is no separate regulation of Internet cafés, telecentres, etc.: the regulation carried out is of the ISPs and of ICHs.

Electronic transaction

A speech in March 1999 by senior public servant Fay Holthuyzen suggested that the government was following several guidelines in the area of electronic transactions: "Regulation should not stifle innovation and growth; regulation should be technology neutral; regulation should provide for functional equivalence; regulation should be sensitive enough to provide certainty with flexibility; and regulation should not duplicate or complicate existing regulatory structures."¹⁶¹ In these ways, the government follows a "light touch" policy towards regulation.

Recently, the government issued a paper on online authentication that regards the level of electronic transaction security as a business decision to be made by the company's proprietor in the contexts of costs, risks and benefits. "Online authentication may be a costly exercise in comparison to a manual authentication process. Agencies will need to consider cost in relation to an identified level of risk associated with failure to properly authenticate a party to an

online transaction.”¹⁶² Ultimately, regulation of electronic transactions is seen as a decision for managers rather than for government.

Consumer laws for e-commerce and distance trading

The government runs a comprehensive site to help consumers know and protect their rights.¹⁶³ Billed as “the commonwealth government’s one-stop-shop for consumer information in Australia” the site links to a number of “satellite sites” including “the official site of the Ministerial Council on Consumer Affairs (MCCA)”.¹⁶⁴ MCCA includes federal, state and territory ministers with consumer affairs responsibility for both Australia and New Zealand, and this site provides information for consumers and for business, as well as recent consumer news and a link to consumer agencies. A scam watch¹⁶⁵ informs consumers of the risks that people have experienced and how to protect their interests in a range of circumstances, including online.¹⁶⁶

The consumer one-stop shop also links to resources on how to follow best practice in self-regulation¹⁶⁷ and details a new service, “Consumerping”,¹⁶⁸ which is under development. When launched, Consumerping will inform consumers of their rights and responsibilities at the point of online purchase. Consumer and trading legislation requires product recall if a product is unsafe or faulty. Recall activity is also supported by a dedicated website.¹⁶⁹

E-commerce too has its own website¹⁷⁰ (also linked from the consumer one-stop shop), as well as a section in the website of the Attorney General’s Department.¹⁷¹ Commercial regulation is primarily achieved through the *Trade Practices Act 1974* administered by the Australian Competition and Consumer Commission (ACCC).¹⁷² ACCC has its own section on e-commerce, which includes a list of applicable standards and codes.¹⁷³ The site notes that “All States and Territories have their own fair trading laws, which mirror or partly mirror the provisions of Part V of the *Trade Practices Act*”¹⁷⁴ and makes an electronic copy of the Act available.¹⁷⁵

Cyber crime

The Australian Institute of Criminology (AIC) is charged with monitoring crime, and one of its officers, Dr Peter Grabosky, prepared an informative paper about cyber crime and information warfare¹⁷⁶ for a crime conference in 2000 convened by AIC, the Australian Federal Police and the Australian Customs Service. AIC is also conducting a project on white-collar crime (crime carried out against business practices, rather than violent or personally threatening crime). The aim of this research project is to examine “the nature and extent of fraud and white collar crime and [suggest] appropriate control strategies”.¹⁷⁷ The project has collected a range of resources¹⁷⁸ and is ongoing, but one significant publication resulting from it is: *Electronic Theft: Unlawful Acquisition in Cyberspace*.¹⁷⁹

Under Australian legislation, some variations of Internet gambling are illegal, and the provision of such services to Australian residents is thus a crime.¹⁸⁰ While it is legal to provide these services to people outside Australia, it is not legal for a “customer physically present in Australia . . . to play games of chance, or games of mixed chance and skill. Examples include roulette, poker, craps, online ‘pokies’ and blackjack”.¹⁸¹

Digital signature

NOIE has recently released a report on online authentication and identification. It deals, for example, with PINs, passwords and user IDs. The matter of digital signature is specifically addressed in Chapter 5.¹⁸² The supposition is: “While Public Key Infrastructure (PKI) applications only constitute a small percentage of authentication solutions currently in use, it is expected that PKI will play a greater role in authentication in the future.” PKI allows “users of a basically unsecured public network such as the Internet to securely exchange information through the use of public and private cryptographic key pairs that are obtained and shared through a trusted evaluated infrastructure”.¹⁸³ This is the direction in which the government sees digital signature heading.

Data protection and privacy

Much commonwealth law, including that relating to privacy and data protection, is supported by the Office of the Attorney General.¹⁸⁴ The National Privacy Principles¹⁸⁵ set out how data can be collected and what it can be used for. In particular, they prohibit any use of information for purposes other than that for which it was collected, except in certain specified circumstances. Organisations are responsible for ensuring the security of the data they hold and for prohibiting access to any personal information (except in specific circumstances). Even so, in April 2001, “The Article 29 Data Protection Working Party of the European Commission . . . released its opinion that more work needs to be done before Australia’s new private sector privacy legislation¹⁸⁶ will meet its adequacy test”.¹⁸⁷ Noting that only two non-European countries had met this standard, the Attorney General argued in a press release that the co-regulatory approach (government and business) offered a number of areas of protection not included in other regulations that had been accepted as “adequate”.

As with all information societies, there is a range of non-government and campaign organisations concerned with the freedom of information, privacy and the rights of the individual. Many of these groups monitor the workings of data protection and privacy principles and raise them with the Federal Privacy Commissioner,¹⁸⁸ who is responsible for ensuring that promised protection works adequately. Watchdogs, information sources and pressure groups include

the Australian Privacy Foundation,¹⁸⁹ Electronic Frontiers Australia Inc.¹⁹⁰ and a freedom of information resource¹⁹¹ maintained by the University of Tasmania. Their websites are most likely to offer indications of current causes for concern in terms of invasion of privacy or misuse of data.

Broadcasting licensing and content regulation

As part of the mixed broadcasting economy, public service broadcasters ABC¹⁹² and SBS¹⁹³ are regulated by charter. This regulation mechanism is included in the Acts of Parliament through which the broadcasters are administered (although independent of the government itself because of the role of the management board).

ABA¹⁹⁴ regulates commercial and community tele-vision and radio services, and their authority extends to the Internet. Among their priorities is the administration of local content requirements (including children's programmes, drama and documentary making). The Office of Film and Literature Classification¹⁹⁵ regulates the classification of publications, films (and videos) and computer games.

Convergence and multimedia regulation

DCITA (Department of Communications, Information Technology and the Arts), resulted from the merger of different sections to link the interests of these converged areas, indicating an acceptance of the thesis put forward by Trevor Barr (2000) that new media in Australia marks a coming together of IT, telecom-munications and "old" media content organisations. While the regulatory body for multimedia (online) content is ABA, DCITA evaluates the performance of the regulatory regime against policy objectives and keeps records of complaints forwarded to ABA and the outcomes of the complaint process.¹⁹⁶ The Office of Film and Literature Classification regulates multimedia material on CD-ROM that can be categorised as a computer game or a publication.

Convergence is also promoted by the championing of "Creative industries clusters" in a report published in October 2002:¹⁹⁷

The study found that the applications of digital technologies in some creative and media industries, like music and film post-production, are resulting in significant changes in the way content and applications are developed and produced. This will require new business models and ways of working, as well as new skills and infrastructure to support business management and collaborative work within the digital content and applications industries themselves.¹⁹⁸

Intellectual property rights regime

Intellectual property (IP) is also under the control of DCITA,¹⁹⁹ although responsibility for policy development is shared with the Copyright Law Section of the Attorney General's Department.²⁰⁰ Given the continuing challenges of the digital environment to traditional conceptions of copyright and intellectual property, there is a standing Copyright Law Review Committee (established since 1983). This committee looks at matters placed before it by the relevant DCITA minister. It has published a number of reports and related publications,²⁰¹ including a recent one on copyright and contract.²⁰²

In keeping with the principles of "light" regulation, the commonwealth government encourages its agencies "to only acquire the IP necessary for achieving their corporate missions and to be alert to opportunities for financial savings".²⁰³ The aim of this regime is to increase the ability of Australian innovators to commercialise new knowledge and make this available to the global marketplace. This aim is also furthered by the government's innovation strategy, *Backing Australia's Ability*.²⁰⁴ Recently, the Australian Research Council released the results of a *National Survey into Research Commercialisation*,²⁰⁵ which is also a strategy to encourage greater use of intellectual property.

WTO status and commitments, regional memberships, and foreign equity limits

Australia is a member of the World Trade Organisation (WTO), and it has been a member of OECD since 1971. It is also a founding member of APEC (in 1989) and of the Indian Ocean Rim Association for Regional Cooperation (in 1997).

One important regional initiative relates to the commonwealth government's December 1998 National Bandwidth Inquiry, instituted "because bandwidth related issues are widely regarded as being one of the key enablers for the development of the information economy in Australia".²⁰⁶ As part of this process, the government highlighted inequities in the cost of international Internet traffic, mirroring a concern widely held by APEC countries that "current arrangements favour increased US centrality and dominance in the regional Internet service provision business".²⁰⁷ An APEC TEL (Asia-Pacific Economic Cooperation Telecommunications) Working Group²⁰⁸ was the outcome of this focus, and Australia played a leading role in the task force established to examine these issues.

The *Australian National Bandwidth Inquiry Report*²⁰⁹ concluded that:

- The current international charging arrangements for Internet services are inequitable as:
- Australian ISPs do not get reimbursed for carrying US-generated traffic on the trans-Pacific link; and

- Australian ISPs are not reimbursed (or revenue offset against the cost of accessing US networks) for carrying US-generated traffic on their Australian domestic Internet networks.²¹⁰

This observation builds upon an original impetus for the inquiry, which recognised that “regardless of the direction of the traffic flow . . . Australian and other non-US operators are required to pay the cost” of accessing the Internet and “the consequences of this arrangement is that Australian consumers accessing the Internet pay more than their US counterparts to cover the cost of the international link to the US”.²¹¹ This issue of a pricing inequity that effectively sees the rest of the world subsidising US Internet activity has yet to be resolved, but it has led to a “groundbreaking” APEC agreement on a set of principles for international Internet charging arrangements.²¹²

Talking about the APEC agreement, a DCITA media release²¹³ said that “non-US network providers have been required to meet the costs of international Internet carriage both to and from the USA regardless of where the connection is generated from” and quoted Australia’s Minister for Communications, Senator Alston, as commenting that “currently over 30 percent of US-Australia Internet traffic emanates from the USA, and this needs to be reflected in commercially negotiated cost-sharing agreements”.²¹⁴ There is a specific website, “Telecommunications Services and the WTO”, listing issues Australia wants included on the negotiating agenda regarding the international trade in services. One objective is “domestic regulation, which is trade-restrictive, for example, inadequate regimes for interconnection, competition rules which enable incumbents to abuse their dominant market position, and a lack of transparency in licensing requirements”.²¹⁵

In general terms, Australia sees itself as open to foreign investment, with Singapore’s SingTel investing S\$14 billion in the August 2001 takeover of the second largest telecommunications carrier in the country, Cable and Wireless Optus.²¹⁶ During 2000, with the collapse of One.Tel, the number of mobile operators declined from five to four. “Across the OECD, only nine countries including Australia had more than three mobile operators in 2000 – Canada, Denmark, Germany, Japan, Korea, Netherlands, UK and USA. Only two countries had more than five operators in 2000 – Canada and USA.”²¹⁷

Telecommunications Act

Telecommunications is currently regulated by the *Telecommunications Act 1997*,²¹⁸ but this is a fast-changing sector in Australia, as elsewhere. In barely over a decade, Australia has gone from a national monopoly on telecommunications (held by Telstra) to a very active marketplace where telecommunications is integral to Internet, broadband, mobile and fixed-line services. These

changes and relevant policy drivers are discussed in more depth in the sections on “ICT industries and services” and “civil society”. Consumer issues are covered in the section on “Consumer laws for e-commerce and distance trading”. Telecommunications customers also have access to the Telecommunications Industry Ombudsman.²¹⁹

In September 2002, the DCITA minister signed a “Determination”, which allowed wireless equipment to be used for networking of multiple computers in Internet cafés (or some multi-computer homes) without making such organisations and households subject to carrier licensing obligations (given that they would not have been carriers if the same business had been using cable to network computers). The minister believes that “by treating wireless technologies similarly to cable-based networks, businesses using wireless technologies will not be unfairly disadvantaged by the carrier licensing obligations. This will encourage new players to enter the market and develop innovative technologies that will boost the Australian ICT sector”.²²⁰

Two recent reports on telecommunications will directly impact upon consumer access and use. The House of Representatives Wireless Broadband Inquiry Report *Connecting Australia! Wireless Broadband*²²¹ examines (among other things) the potential of wireless to “provide a ‘last mile’ broadband solution, particularly in rural and regional areas”²²² and will now be considered by the Broadband Advisory Group, chaired by the minister, which functions are to advise on the “future directions for broadband policy and to ensure that its broadband policy maximises the social and economic potential of broadband services”.²²³ A range of stakeholders will carefully examine the second report, on the *Regional Telecommunications Inquiry*,²²⁴ and decide whether the standard of telecommunications services in regional and remote Australia is good enough to allow the remaining 51 percent of Telstra to be sold on the share market. (The usual term is “the full privatisation of Telstra”, acknowledging that 49 percent has been sold so far.) The inquiry was particularly concerned about the lack of fast and effective access to the Internet in remote and rural areas.

Local domain name registry and dispute resolution

In September 2001, the international Internet Assigned Numbers Authority (IANA) formally recognised that in Australia “management of the .au domain name space should be transferred to self-regulatory body .au Domain Administration (auDA)”.²²⁵ Like many other organisations in the Australian co-regulatory system, “auDA is a non-profit, representative industry body formally endorsed by the Australian Government as the appropriate entity to manage the .au space”.²²⁶

Open source movement

The University of New South Wales (UNSW) is one of the major Australian movers in the open source movement through its membership in the Gelato Federation.²²⁷ The aims of the open source movement include: “a primary emphasis on the user; a commitment to developing high quality, 100 percent open source software; and a dedication to a non-bureaucratic, egalitarian, and collaborative working environment”. UNSW helps “provide financial backing, IT infrastructure and human resources to oversee and support Gelato’s mission and operations”. These include the development of “scalable, commodity software to enable researchers to advance their studies in technology-intensive areas, such as life sciences and physical sciences . . . [and the supply of] information services – such as forums and technical data – to make the Itanium Linux platform more accessible to researchers and their support staff”.²²⁸

AUUG (Australian UNIX and Open Systems User Group) has been working for some years to raise awareness of open source issues in Australia, along with online publications such as *ZDNet Australia*²²⁹ and academic journals like *First Monday*.²³⁰ The Internet Society of Australia²³¹ (isoc-au) canvassed the opinions of political parties taking part in the 2001 Australian general election²³² (although only the Greens and the Coalition replied). The 2003 AUUG Conference²³³ takes the theme “open standards, open source, open computing”, which is to be held in Sydney. Notwithstanding this activity, however, discussion of open source has yet to reach a critical mass that will enable awareness to break into popular culture and debate within Australian society.

Research into ICTs

The Australian Research Council (ARC) is the major body for the dissemination of research funds to individuals and institutions other than those specifically set up for research. (Dedicated research institutes such as CSIRO²³⁴ are perceived as having already received adequate research funding.) At the start of the new century, the ARC budget for 2001–2005 was effectively doubled with the identification of four priority areas, or “fields of existing or emerging research strength in which Australia can achieve international leadership and which have the potential to deliver significant economic and social benefits to the community”.²³⁵ The four areas identified are nano-materials and biomaterials; genome/phenome research; complex/intelligent systems; and photon science and technology.²³⁶ The ARC website has a number of stories of “research in action”²³⁷ and a recent report of a *National Survey into Research Commercialisation*.²³⁸

CSIRO carries out a range of research projects from the creation of broadband wireless systems to networking for the information economy and seamless mobile

communications.²³⁹ It claims that “the ICT sector is one of the fastest growing in the economy with a sustained growth rate approaching 12 percent over the last five years. It accounts for some \$50 billion in sales with annual exports close to \$4 billion”.²⁴⁰ Data on business sector R&D indicates A\$4.8 billion in 2000–2001, with A\$1.3 billion in ICT research. However, in October 2002 Ericsson announced the closure of its Melbourne-based AsiaPacificLab with the loss of 450 science and research jobs.²⁴¹ “There is an active ‘parliamentary committee inquiry into business investment in R&D’ and Ericsson’s submission to this enquiry had noted that ‘in the current highly competitive and difficult investment climate for the ICT sector . . . public demonstrations of commitment to an Australian-based ICT industry are of vital importance’.”²⁴²

Future trends

The withdrawal of funding from Ericsson’s AsiaPacificLab indicates a difficult time ahead for the ICT R&D community in Australia. This may be balanced a little by the federal government’s identification of complex/intelligent systems as a priority research area, with additional research funds made available for projects in this area. Nonetheless, employment prospects in the area are declining, and demand is falling for computer and information science courses.

Some of these changes can be explained by the pervasiveness of ICTs in Australia, specifically the maturity of the Internet market. Figures indicate that by 2003, two-thirds of Australian households are likely to have Internet access in their homes. Households coming to the Internet after this time are probable “late adopters”, tending towards older, conservative, poorer consumers. The more attractive innovator and early adopter markets are moving into broadband technologies, with some deciding to use wireless and network solutions in the domestic context to enable more than one family member to use the Internet connection simultaneously.

Taking into account home, school, workplace and public access (libraries, etc.) connections, the availability of the Internet has reached the stage where public resources will increasingly focus upon providing information via online services. “Digital divide” issues of access and equity remain, and it will always be the case that those who need services the most are least able to access them, but these concerns are raised by fundamental questions of literacy as well as by online access. (Which is not to say that a fair and compassionate society would accept the current levels of disadvantage.)

Regulatory responses to the Internet and to digital content have only just begun to gather momentum. The forthcoming US legal battles regarding replay television²⁴³ are only one indication that copyright and content ownership are both highly contested areas in the digital environment. Similarly, the response of the International Federation of Phonographic

Industries to the global downturn in music sales²⁴⁴ indicates that the closure of sites such as Napster is the beginning, rather than the end, of their concerns. Meanwhile, there is every indication that the Internet will continue to grow in its role as a central feature of both popular culture and youth culture in the richer Western economies.

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