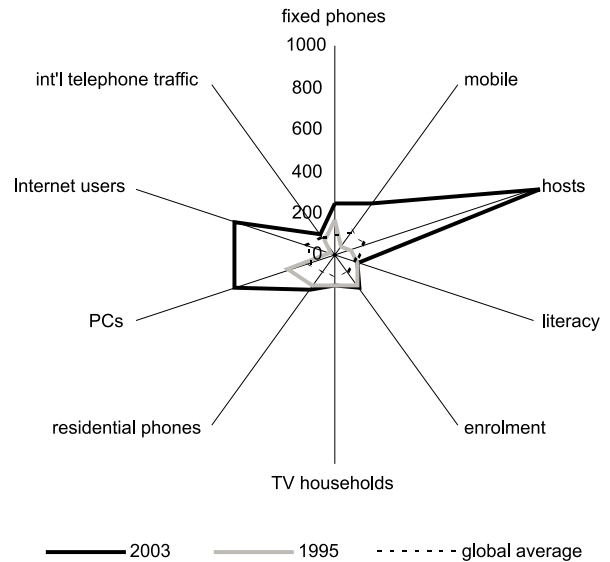# .au

Australia

Lelia Green

Overview

Australia has continued to prosper over the past years, but changes may lie ahead. With interest rates on the rise and the Australian dollar gaining against the American greenback, most imports are cheaper while exports are dearer. When Prime Minister John Howard first came to office, the Internet had barely begun to make its presence felt. Now the digital dimension is central to policy-making in areas as diverse as government service provision and primary school education.

While Australia as a whole is a wealthy country, large areas of the continent are sparsely populated and the vast distances make it difficult to connect telecommunications users by fibre, cable or wireless means. There are huge disparities between the services available in towns and cities and those in remote, rural and regional areas. In November 1997, the Howard government sold one-third of Telstra, the publicly owned Australian telecommunications giant, and the money raised (as well as the funds acquired from the sale of a further 16.6 percent in October 1999) was partly committed to improving telecommunications services in non-metropolitan areas under a major scheme called Networking the Nation (NTN).

Although NTN had some success, sophisticated digital services remain comparatively inaccessible and/or unaffordable for domestic consumers in large areas of the outback. The government promised not to sell any of its remaining 50.1 percent holding of Telstra shares until the communications problems in the bush had been fixed. In September 2000, the report of the first independent Telecommunications Services Inquiry, Connecting Australia (or the Besley inquiry), was made public and it documented a range of continuing problems.[1] In November 2002, the report of the Regional Telecommunications Inquiry, Connecting Regional Australia (also known as the Estens inquiry), which evaluated the relative success of the strategies formulated to address the problems catalogued by Besley, was delivered and it made 39 recommendations.[2] In June 2003, the government announced its response to the Estens inquiry,[3] accepting all recommendations and declaring that its promise to address the problems faced by remote telecommunications users had been kept. In its view, it has now become permissible to sell off the remainder of Telstra once the stock market is strong enough to ensure a good price. (This has yet to happen.)

As this brief introduction indicates, the government has primarily invested resources in efforts to equalise services between urban and country areas rather than concentrating on other disparities such as between rich and poor, English-speaking and non-English-speaking, young and old, and people with disabilities and those without. However, many residents in remote Australia remain at a significant communications disadvantage. A June 2004 review of the Universal Service Obligation and the Customer Service Guarantee identified problems with the way in which some services are subsidised in order to make them universally available.[4]

Given that broadband services are theoretically accessible (via satellite) throughout country areas, the cost of this service and the options available do not equate to the digital infrastructure of the cities. Further, a major concern of country residents is what they call "future-proofing". They fear that the government's commitment to continually upgrading country services will cease to be a priority once Telstra has been sold off. Decision makers in regional and rural areas sought a future-proof guarantee that their communities would not find telecommunications services declining relative to cities' in the years to come. The government responded with a commitment to continue a programme of regular inquiries into any differences in service provision between metropolitan and non-metropolitan areas. It also promised to develop a National Broadband Strategy.[5]

In the cities, the more affluent sections of the workforce and population are combining increasingly affordable broadband connections with wireless connectivity. This allows a number of (mainly) laptop users with wireless cards to access the Internet simultaneously, ending arguments in

families about who has first turn on the Internet-connected computer at home. Edith Cowan University in Perth recently announced a ten-year strategic educational alliance with IBM to develop teaching and learning strategies for university students using wireless technology.[6] If small-scale trials deliver the anticipated benefits, the future vision includes wireless networking of laptops for all students.

Australian higher education is facing significant uncertainty in the short term, mainly to do with funding and the re-regulation of student fees. Some sources estimate that Australian students will be paying A\$662 million more for their tertiary education over the 2005–2009 period under a government plan that allows universities to increase their tuition fees by up to 25 percent for undergraduate students entering university from 2005. This is likely to impact upon enrolments for science and IT degrees, which are already more expensive than arts and humanities courses. The majority of universities have decided to implement this rise and the rest are likely to follow. The opposition Labor party has decried the policy of fee increases saying it will put poorer students off going to university.

There is also continuing concern about the lack of female students enrolling in IT and related subjects. In 1990, the Department of Employment, Education and Training set Australian universities the target of increasing the proportion of women graduating with a professional computing qualification to 40 percent of their year cohort by 1995.[7] Nonetheless, women's participation rates have failed to respond, with most courses historically enrolling 20 percent women[8] and many failing to achieve that level. Anecdotal accounts place the proportion of female students as low as 10 percent in some courses, and women's participation rates in the professional IT workforce reflect this differential education dynamic. Although this is a problem in many countries across the globe, it represents a lost opportunity in terms of realising the potential contribution of women to IT and other digital industries.

The Australian–US Free Trade Agreement (AUSFTA), which came into force on 1 January 2005, raises a number of issues for the coming years. The extension of copyright to 70 years after the author's death (see sidebar) is not the only aspect of the revised intellectual property rights regime included in AUSFTA with implications for the digital realm. Some provisions deal with new liabilities for ISPs that hold allegedly infringing material on their networks and servers. Others require the banning of devices for circumventing the operation of technical protection measures (TPMs), which may have implications for the development of open source software.

Under AUSFTA, it has become a criminal offence to manufacture and sell equipment to counter TPMs. Even though a 2004 report to the Attorney-General's Department argued that TPMs should be defined as measures limiting (or preventing) the infringement of copyright, AUSFTA implies much more than this. TPMs may include, for example, the chips required to modify computers or games consoles to read a range of disks. At the current time, the Australian courts have been asked to determine whether regional coding is effectively a TPM. Given that the Australian Competition and Consumer Commission opposes regional coding of DVDs and other digital formats, and has lifted restrictions on parallel importing over the past few years, if regional coding is deemed to be a TPM one effect of AUSFTA may be to reintroduce these restrictions in the name of free trade.

Until recently, more positive developments had been occurring in the sphere of digital arts. The Australian Network for Art and Technology developed a digital database Synapse (*http://www.synapse.net.au*) as a resource to encourage creativity, collaboration and new connections between all interested parties – from artists through to science organisations. The database was a significant outcome of the Australia Council's New Media Arts Board, with the collaboration of the Commonwealth Scientific and Industrial Research Organisation, the Australia Council for the Arts, and the Australian Research Council. Among world-renowned arts–science projects were "Auto Nomad: A Location-based Handheld Audio Device for Sound-art Applications" and "Fish-Bird: Autonomous Interaction in a Contemporary Arts Setting". According to a 2003 press release issued jointly by the Minister for Education, Science and Training and the Minister for the Arts and Sport, "In Australia, the creative industries have been valued at A\$25 billion a year – as much as the residential construction industry – or 3.3 percent of GDP."[9] It adds, "Creative industries employ 350,000 people and, at 2.7 percent per annum, growth in employment in creative industries outstrips the national average of 2.0 percent." The imaginative fusion of arts, science and technology – and the leveraging of technical innovation through the creative industries – was seen to offer the wider society a range of benefits from social through to industrial. Sadly, however, these developments suffered a body blow in December 2004 when the Australia Council announced that the New Media Arts Board was to be dissolved.

Local online content

Local online content in the Australian context is plentiful. Critical enablers appear to be located in the education sector, where many courses on website construction are integrated with other study areas. College students are often required to access websites to find out about assignments, course requirements and other information. They may also be required to post information on websites, or develop websites, as part of their assessment protocols. Additionally, face-to-face teaching may be supplemented by online education mediated through Blackboard or other teaching interfaces. One consequence of this new teaching method is that courses without a central connection to ICT still teach

ICT proficiency as part of the skill set to be developed during the study programme. While this may involve putting some students at a disadvantage if they do not have online access at home, most college campuses have computer labs – many with 24-hour access – to help less-advantaged students. Some employers also support their employees in further study by allowing the use of office equipment for their studies. There are government schemes to subsidise schoolteachers' purchase and use of PC equipment, and these initiatives build teachers' confidence as well as their use of online content in the classroom.

Many government policies drive the creation and proliferation of local content. Not only are most government issues debated on the Web, and results announced on dedicated websites, but agencies responsible to the government are also required to have an Internet presence.

The extension of copyright in Australia

The recently negotiated Australian–US Free Trade Agreement (AUSFTA) has extended copyright from 50 years to 70 years after the original author's death. This is an initiative mainly championed by Hollywood interests (e.g. the Motion Picture Association of America) facing the passing of icons such as Mickey Mouse into the public domain. By definition, this copyright extension did nothing for the originator of the work (who died 50 years earlier), while their children's interests were already largely protected by the half-century extension beyond the life of the creator. The major beneficiaries of copyright extension are the subsequent heirs of the originator's children and corporations which have acquired copyrights (such as Disney, which has bought the rights to Winnie the Pooh, originally due to lapse in Australia in 2006).

The Australian Senate committee assessing the extension proposals remarked with some irony upon "whether it is appropriate to include IP [intellectual property] in an agreement that has the aim of advancing free trade. IP rights are generally seen as a restraint on commerce since they can be used to preserve monopoly power and to inhibit technological developments."[a] The committee also commented upon the precedent of adopting an international agreement that overrode Australia's domestic law reform processes.

In 2000, Australia's Intellectual Property and Competition Review decided against extending the term of copyright beyond the existing 50 years. It was that committee's belief, following submissions by bodies such as the Australian Digital Alliance, that it was in the public interest to have copyrighted materials continue to enter the public domain after half a century. The review could identify no benefit that would outweigh the social costs of further restraint upon the circulation of ideas, published works and artistic creations. Its recommendation, accepted by the commonwealth government in 2001, was that the term of copyright not be extended at that time and that it should never be extended without a thoroughgoing examination that weighed all costs and benefits. Arguably, in the rush to ratify AUSFTA, such an investigation was precluded.

As any author citing copyrighted works published in the past 50 years will attest, the time and cost of obtaining permissions for images, artworks and extracts of published writings can prove prohibitive. The costs are both in research hours and in fees. Such considerations may alter the content of a book to exclude certain copyrighted items on the grounds of cost or convenience. Further, some estates, agencies and copyright holders choose to control the artistic expression of the creative idea. Copyright holders may ask to see the context within which the quote will be used – effectively censoring "dissenting" and "dissident" usage, and only giving permission if the context is approved. These problems have already affected Australian productions of works created by overseas playwrights and composers. This has obvious implications for free expression and creative reinterpretations. What if Shakespeare's works were still copyrighted and his estate had not liked what Baz Luhrmann proposed to do to Romeo and Juliet in his 1995 film?

Academic lawyer Dr Matthew Rimmer argued that "the legislation will have a severe impact upon cultural institutions – such as libraries, galleries, orchestras. It will interfere with the activities of electronic publishers of public domain works – such as Eric Eldred's Eldritch Press, The Internet Archive and Project Gutenberg."[b] Other commentators noted the irony that it will be easier for tomorrow's generation to research the 19th century than the 20th, since resources from the 19th century will be readily available online while those from the 20th may have copyright successively extended. (Australia is already on notice that 70 years is an interim goal for the USA, which would prefer 95 years' copyright after an author's death.)

[a] *http://www.aph.gov.au/Senate/committee/freetrade_ctte/report/interim/c03.doc.*

[b] *http://www.aph.gov.au/Senate/committee/freetrade_ctte/submissions/sub183.pdf.*

Additionally, the government has provided grants to help communities develop online material. The NTN initiative, for example, allowed communities to apply for funding for specific projects. One project may serve as an example of many. The Southern Yorke Peninsula Community Telecentre in South Australia worked with other organisations and agencies to raise funds to create a local portal (*http://www.yorkeregion.on.net*). An NTN report commented: "The centre has recorded some 5,000 users, collaborated with Seniors On Line, written training material, negotiated an agency contract with the Australian Taxation Office, become the Centrelink agency for the area, is working with the regional Technical and Further Education (TAFE) College and developed the regional portal website."[10] In this way, content is created while local skills and creative, educational and supportive networks are developed.

The World Wide Web is also a major site of Australian popular culture, linked into and promoting movies, magazines, books, radio and television. Most television programmes have an official website, and the new breed of reality programmes – pioneered in Australia in 2001 by the Dutch-developed "Big Brother" show – includes interactivity via SMS texting and a dedicated website with 24-hour live coverage of "the house". This show, along with other franchised spin-offs of global rating-busters (like "Australian Idol"), both develops and reflects the increasingly interactive nature of youth culture. The commercial nature of much of this television – the sponsors, the giveaways, the reliance upon fee-per-call high-tech communication – drives further local content creation specifically targeted at the Australian marketplace.

Website creators classify the content of their sites according to a code of conduct[11] drawn up by the industry and registered by a watchdog body – the Australian Broadcasting Authority (ABA) – which is also responsible for implementation. If consumers have reason to complain about content, then that complaint is investigated and a remedy upheld if it is found to be justified. ABA reports the outcomes of all Internet-related complaints on a monthly basis.[12] ABA is due to be merged with the Australian Communications Authority (ACA) to form a new body, the Australian Communications and Media Authority (ACMA), before July 2005 (see also "Regulatory environment" below).

Online services

As implied above, there has been extensive creation of online content in Australia, and this has often been related to the provision of online services. The business, education and government sectors are all keen to provide services online, seeing this medium as a cheap and effective delivery mechanism. Almost any information and communication service available in Australia may be researched, booked and paid for online. Three issues arise from this development.

As online services become better and more plentiful, those without online access experience greater comparative disadvantage. Australian telephone banking, for example, tends to be more costly for consumers than Internet banking, while face-to-face services may be charged even higher than either of the remote options. Contacting a government agency by telephone can involve "holding" on the line for many, many minutes during which time the website is often extensively advertised.

Another point that arises is that many people with great need to access government services may not be literate, or may not speak English. While the Council for Multicultural Australia (*http://www.immi.gov.au/multicultural/cma*) tries hard to ensure that vital online services are available in the range of languages spoken as mother tongue by all Australians, and the government makes many of its websites available in a number of different languages, English remains the dominant language for website creation.

Finally, services tend to be developed to work best on top-of-the-range equipment, with the best possible network infrastructure, but comparatively few people have access to these technologies. One key promise following the Estens inquiry is that broadband services will be made more available to country areas (the National Broadband Strategy): "We are working hard to make ADSL available in as many regional areas as possible," says Telstra's Countrywide Managing Director, Doug Campbell. "We are also looking at wireless technologies to extend access to broadband where that might be appropriate."[13] Until then, people in remote areas will find accessing some online services much more difficult than would be the case if they had a broadband service.

Key national initiatives

The critical importance of the Telecommunications Services Inquiry and the Regional Telecommunications Inquiry in building awareness of ICT policy issues and proposing strategies to address regional inequities was discussed earlier. Inequality in service provision is seen throughout Australia, even though the interventions were targeted at remote, regional and rural areas.

The government is the primary driver of national initiatives. For example, when it makes funds available to organisations, it frequently requires reports on the progress of those initiatives to be posted on the Web. Commonwealth government department grants (such as discretionary grants from the Department of Education, Science and Training) are an example of funding that comes with that requirement.

In April 2004, the government disbanded the National Office for the Information Economy (NOIE) and split its functions between two bodies. The Australian Government Information Management Office (AGIMO) was assigned all of NOIE's government responsibilities, including six areas

in which ICT use is seen as making these areas "better": government, information, services, business, infrastructure and practice (all headlined on the AGIMO homepage *http:// www.agimo.gov.au*). More general functions and resources

were allocated to a downgraded Office for the Information Economy (OIE), located in the Department of Communications, Information Technology and the Arts.[14] OIE has a policy-development and advisory role and

The Western Australian Telecentre Network

With the mission of servicing regional communities through technology, Western Australia's network of telecentres is an international success story. From the opening of the first telecentres in 1991, the network has grown to over 100 centres, each reflecting the needs and demands of the community it serves. The number of telecentres – as well as their geographical spread – makes this the largest coordinated network in the world. Nonetheless, the network is currently being evaluated against possible future demands.[a]

Although it is hard to generalise their roles, these telecentres are used to support further education, professional development, job seeking, teleconferencing, community publishing, small business start-up, liaison with government departments, online banking and email. The Western Australian Department of Local Government and Regional Development has oversight of the telecentre network. At the same time, government, educational and business partners are often enlisted by local communities to help support a telecentre application.

Learning from the early experience of supporting the first telecentres, the Western Australian government established the Telecentre Support Branch (TSB). This agency helps to ensure existing telecentres receive the guidance and services they require and that prospective telecentres have the community backing needed to ensure their success. TSB has developed a memorandum of understanding outlining key principles to be accepted before a telecentre proposal can be adopted as part of the network. The first requirement is a local champion for the scheme who has support from the community: "A community guarantor is required to show local commitment to the project, and community members must take responsibility for managing the Telecentre's operations."[b] Telecentres are only established in response to community needs and demands, operating with the keen involvement of a body of volunteers willing to pass on their skills and expertise to develop the use of ICT in their community.

Each community enters into a resource and performance (R&P) agreement with TSB. This sets the strategic plan for the year and provides the basis upon which the telecentre is evaluated. Telecentres report back annually on their performance, although community usage rates are monitored six-monthly. Each performance objective is matched by an indicator which demonstrates in a measurable way whether that aim has been met, and the R&P document is an important component in attracting continuing government funding.

The website of the telecentre network notes that "a typical telecentre has computers, the Internet and email facilities, two-way 128kb videoconferencing, photocopiers, fax machines, printers, television and video machines, decoders, scanners and much more depending on the needs of the community" and also that telecentres are all different.[c] Some include small-business support services (such as secretarial resources and agribusiness consultancy); others may be part of the local library or a craft shop. The important constant is that they are friendly, helpful and accessible. Where a community cannot support a full-service telecentre, telecentre access points allow shared Internet access.

There is no expectation that the telecentres should make a profit, but neither should they be an unsustainable drain on public funds. The local community owns the telecentre, which is set up as an independent incorporated body under the supervision of a management committee. Telecentre start-up funds are available from both the commonwealth and state governments and can be put towards the required purchases of technological equipment. Provided the periodic resource, performance and usage targets are met, there is also an annual grant towards the salary of a part-time coordinator. Any extra costs have to be met by a cost-recovery reimbursement schedule, by fund raising or by in-kind community donations through volunteer labour. Approximately 500,000 people access a service provided by a Western Australian telecentre each year.

[a] *http://www.dlgrd.wa.gov.au/futuring.htm.*

[b] *http://www.dcita.gov.au/Article/0,,0_2-1_1-2_5-4_90269,00.html.*

[c] *http://www.telecentres.wa.gov.au/telecentres.*

promotes the development and take-up of IT opportunities. Although it may seem to be a comparatively small change for a stand-alone national office to become incorporated into another department as just an office, some commentators see the repackaging of responsibilities as indicating that the information economy in Australia has come of age. Instead of being "a vision to be realised", the information economy is now positioned as "part of everyday business".

Enabling policies

Apart from the response in June 2003 to the Estens report, there have been few additional ICT initiatives based solely upon a government agenda. This is largely due to a philosophical perception that enabling policies are best driven by demand at the community level rather than imposed from the top down. Thus, the government (as with the NTN scheme) usually allocates funds in accordance with a competitive bidding regime, ensuring that the projects funded are carried out by a research/implementation team dedicated to a positive outcome.

In response to community-based proposals, the NTN initiative has funded planning studies; fixed communications links; websites and portals; software development; training; videoconferencing; Internet service providers and points of presence; public Internet access facilities (including computers and Internet access facilities in schools, libraries, councils, telecentres and community centres); support/ helpline and technical assistance; awareness raising through demonstrations and visits to communities, businesses, educational institutions and individuals in remote locations; online services; and increased mobile phone coverage. The NTN programme's focus is on "sustainable, needs driven projects that build demand within communities. Public internet access facilities funded under the NTN Program have been instrumental in building community awareness of the latest IT developments and providing a local venue for training and skills development and other support services."[15]

Regulatory environment

The government states its policy as promoting competition within a framework of consumer safeguards. The key problem with this approach, as identified by Barr and by Green,[16] is that there is a range of consumers who do not constitute an attractive market for suppliers of goods and services. The poor, the remote residents, the elderly, the disabled – for example – are much less likely to find suppliers competing to fill their needs than is the case with well-paid professional workers. Nonetheless, the deregulation of the telecommunications industry has seen an increase in service choice and provision along with a decrease in costs. For instance, the number of licensed telephone companies grew from 3 in 1997 to 89 in mid-2003. Where the market operates well (e.g. in cities), the deregulation has delivered consumer benefits.

For those people who fail to attract marketers, consumer safeguards in the telecommunications sector are outlined as being "the Universal Service Obligation, the Customer Service Guarantee, the Network Reliability Framework, priority access for people with life-threatening illnesses, price controls on less competitive services and the Telecommunications Industry Ombudsman".[17] Even so, the Estens inquiry recommended a range of measures that should be implemented to further enhance these safeguards, and the government has committed itself to adopting these recommendations. ACA (*http://www.aca.gov.au*) will regulate Telstra's performance against its commitments on service provision and delivery prior to the creation of ACMA.

Open source movement

The open source movement in Australia continues to gather momentum and has recently broken through from being a "techy" preoccupation to being something that has registered as an issue (and a possibility) in the public consciousness. One indicator of this progress is that it is now a subject of debate for media and communication studies students and academics. An online journal *M/C: A Journal of Media and Culture* dedicated its July 2004 issue ("Open") to variations on this theme. As part of the rationale for this special issue, editors Felix Stalder and McKenzie Wark set themselves the questions: "What is the impulse behind this sudden explosion of 'openness'? What makes a community 'open'? Is open really always better or does openness imply its own set of dangers and its own particular forms of exploitation? What are the aesthetics of openness?"[18] They give their motivation for publishing this special issue as attempting to assess the potential of the FOSS (free and open source software) movement "without being sucked into yet another cycle of hype and disappointment".

Research and development

Although the government identifies national research priorities for funding, many of the funding schemes require researchers to develop possible projects which are then evaluated in a competitive funding round before the decision is taken as to which projects will be funded. This means that the government will identify digitally driven themes but allow the innovativeness of researchers to determine the topics that they feel to be most cutting-edge. The Department of Education, Science and Training released in 2003 a report "Mapping Australian Science and Innovation" that places the various components driving Australian R&D into a comparative framework.[19] One of the players most closely driven by government policy on research (although overseen by an independent board) is the Australian Research Council (ARC).

ARC is the government body for funding non-medical research in Australia. It has a range of strategies to promote ICT development arising out of the government's Knowledge and Innovation Strategy (1999), which looked at structural issues, and Backing Australia's Ability plan (2001), which addressed resource allocation with an increased financial commitment. In 2003, the Allen Consulting Group independently evaluated the effectiveness of these approaches in driving the research agenda.[20] It has also separately evaluated the return on investment delivered by projects funded by ARC.[21]

Trends

The government is likely to continue on its path of identifying national priorities for funding and then requiring that researchers, community groups and non-profit organisations apply for funding through competitive regimes. Competition for funding between communities, researchers and organisations helps to ensure that successful projects are carried out by responsible entities and have relevance for the people. Similarly, by requiring a web presence to establish the credibility of the organisation or group receiving grants, and by requiring the web publication of results, the government will continue to drive online content creation and online service provision across a range of industries in addition to those related to ICT.

In e-commerce, supply issues and inventory management are becoming a focus of differentiation between 21st century businesses and last-century outlooks. Digital management of all aspects of business operation is likely to prove an effective driver of competitive advantage and share-price appreciation, persuading boards of directors to continue exploring new ways to use online and Internet communications to drive business development.

The "soft" regulatory environment adopted by Australia means in essence that the government gets the public to carry out the final evaluation of digital products. Having used industry bodies to set up guidelines as to what is (and is not) acceptable practice, the government delegates to the industries concerned the responsibility to self-regulate according to these guidelines. The public alert the appropriate government-appointed watchdog agency (such as ABA/ACMA for Internet content) when they come across material that they believe breaches the guidelines.

In theory, public interest and feedback close the loop in the system and provide the checks and balances for the scheme: a watchdog regulator consults and the industry body sets up guidelines; industry applies the guidelines; the public assess if the guidelines have been applied correctly and report any concerns; and watchdog regulator evaluates and adjudicates on the matter. Consumer rights advocates,[22] however, argue that this dynamic has reversed many years of progress in consumer protection and changed the balance of power to strongly favour small businesses, the

corporations and direct marketers. Furthermore, they claim that this erosion of privacy and consumer protection in Australian society goes hand in hand with gross intrusion into civil and political rights resulting from the heightened security regime triggered by the September 11, 2001, attacks upon America.

By using what is presented as a "grassroots" approach to programme development and regulation, however, the government helps to ensure a dynamic environment for policy development and application. Cynics say that funding goes to people who are good at proposal writing and who have appropriate insights into government policies and priorities. Nevertheless, many of these successful bidders do have a clear vision of their desired outcome – and the skills, networks and resources to make this happen. The theory is that minimum regulation is in place so that innovation can be driven by a perceived market demand without requiring innovators to negotiate a time-consuming and complex approval process. (Unfortunately, in practice, this does not always work in the consumer's interests.)

Notes

1. *http://www.dcita.gov.au/Article/0,,0_1-2_1-4_104430,00.html*.
2. *http://www.telinquiry.gov.au/rti-report.html*.
3. *http://www.dcita.gov.au/Article/0,,0_1-2_3-4_115488,00.html*.
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6. *http://www.ecu.edu.au/VC@home/pdf/IBMlaunch.pdf*.
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8. *http://www.dest.gov.au/research/docs/womenin_it.pdf*.
9. *http://www.dest.gov.au/ministers/nelson/jun_03/n368_050603.htm*.
10. *http://www.dcita.gov.au/download/0,2118,4_117327,00.doc*.
11. *http://www.aba.gov.au/internet/industry/codes/index.htm#cont*.
12. *http://www.aba.gov.au/internet/complaints/statistics/index.htm*.
13. *http://www.voiceanddata.com.au/vd/feature_article/item_082003a.asp*.
14. *http://www2.dcita.gov.au/ie*.
15. See note 10.
16. T. Barr, *newmedia.com.au* (Sydney: Allen & Unwin, 2000) L. Green, *Technoculture: From Alphabet to Cybersex*. (Sydney: Allen & Unwin, 2002)
17. See note 3.
18. *http://www.media-culture.org.au/0406/01_Editorial.html*.
19. *http://www.dest.gov.au/mapping/pubs/main/final_report.pdf*.
20. *http://www.arc.gov.au/pdf/ARC_report_knowledge_and_innovation.pdf*.
21. *http://www.arc.gov.au/pdf/ARC_wealth_of_knowledge.pdf*.
22. Such as Roger Clarke, Xamax Consultancy, and Canberra.