

# **DIGITAL DIVIDES: FRAMING THE ISSUES**

Denise Meredyth and Julian Thomas

## **1. Introduction**

This paper reviews expectations about the potentially radical impact of information and communication technologies on forms of governance. The relations between politics, government and new communications technologies are highly contentious. While community networks proliferate, and governments press ahead with new models of electronic service delivery and information provision, arguments over the ramifications of information technology have become a prominent feature in fields from social policy to media law.

In public debate and academic scholarship, opinion is divided over a two connected issues: What are the consequences of 'information poverty' for social cohesion, security and civil peace (Norris 2001, Bowie OECD 2000)? Can new technologies be used to open up government and democratise public institutions and communication systems? While some cultural and media studies scholars celebrate the democratising potential of the Internet, and economic liberals highlight the dynamism of relatively unregulated new media, social scientists and policy agencies have pointed to the uneven social, cultural and geographical diffusion of computers, and the potential of technology use to amplify inequalities, or to fragment political culture (Sunstein, 2001; cf. Castells 1996, Giddens and Hutton 2001).

We review some of these questions here, reviewing the main preoccupations in current debate, focusing on the political problem of information poverty, its conceptualisation by governments and others, and the strategies that are being devised to address it. In doing so, the paper identifies the need for further research on current and historical patterns of adaptation and improvisation between technology, government and democratic political rationality.

## **2. Information poverty and political culture**

Media and communications industries are going through a period of rapid change, driven by digitisation, convergence and globalisation. New services are emerging, old media are being transformed by new technologies, and the boundaries between traditional industry sectors are shifting (see e.g. Goldsmith et al 2001, Givens 1998). The entire sector, once very largely shaped by government, appears to be moving into a more competitive and market-driven era.

The innovative, convenient and low-cost online services that have appeared in the private sector have created an expectation that government can and should provide similar innovations. Citizens, it is argued, now expect from governments the same convenience and efficiency they

experience in using commercial electronic services, such as airlines, online retailers, and electronic banking. Information should be accessible on demand. Costs should be reduced for both users and government; at the same time, electronic commerce initiatives are expected to stimulate economic activity in the state. Integrated government is supposed to establish common infrastructure for delivering government services and sharing information within and between agencies across all tiers of government. Material should be tailored for the needs of the individual user; users are supposed to be able to find information and services without knowing how government agencies are structured. Services should be accessible in regional, rural, and even remote parts of the country (see for example Rimmer 2002).

Since the early 1990s, governments and international organisations around the world have devoted enormous resources towards understanding, documenting and participating in the digital revolution in communications. New communications technologies have come to be seen as central to economic growth, community development and the modernisation of public administration, through improved delivery of key government services. They are also seen as major drivers for economic growth, offering improved productivity, more open markets, and new demand for skilled labour.

Information policy has emerged as a new field of public administration (see Fountain 2001). Governments have begun to make strategic links between problems that were hitherto dealt with in different portfolios, separated by administrative boundaries. Formerly unrelated objectives are being aligned at regional, national and international levels. Policy now attempts to address in a more coherent way issues such as electronic government, data protection, intellectual property, electronic commerce and the 'digital divide'.

'Electronic government' involves the attempt to construct publicly accessible information systems, providing services in health care, income support, housing and taxation on line (see for example, UK Cabinet Office 1999). In Europe, North America and Australia, governments have now made significant, but not uniform, progress in making government information more widely available, in providing services electronically, in enabling citizens to engage more closely with government and in building an 'information economy'. There is now a significant range of federal and state government services available online and a new generation of government portals has been developed at the whole of government level, aimed towards the specific needs of different groups of users, and organised around specific topics. The aim is to save costs, while making public information and official decisions more transparent and accountable. If customers are able to seek the information they need, and if information on their needs is available in consolidated form to those assisting them, then the system will be both more efficient and less costly, in terms of staff time, infrastructure and customer reaction. Social service customers will become more capable of self-help; consultation will be devolved to the most local level.

The rationales associated with electronic government initiatives combine social, civic and economic policy objectives. The *economic* objective is the need to foster and sustain electronic commerce. Here, governments often aim to act as a catalyst for the wider economy, using their influence in the market and attempting to provide best practice examples of the adoption of new technologies, especially in the areas of encryption, information security and accessibility. These measures are aimed particularly at building trust in new electronic forms of communication and

exchange. Without confidence and security, the benefits of electronic transactions will be limited to niche markets. The *social* and *civic* dimensions of the knowledge economy are also important. The growing ubiquity of information technologies in the daily lives of citizens has spurred governments to develop policies aimed at fostering greater community participation; the Internet has evolved rapidly from a rarefied network for the technologically minded to an everyday communications medium.

Expectations are running high. Achieving these ambitions has been far from easy though: it involves the parallel redesign of online and offline services provided by government. It will also involve making sure that citizens and customers have the capacity to access and use computers, to locate and read information and to navigate the new informational architecture growing up around them. Some sections of the community are likely, though, to remain much slower to adopt the Net, whether for economic, cultural or other reasons. It is critically important that these groups are not left behind. Nevertheless, as the past five years of research and policy activity have shown, there is a persistent gap, even in the wealthiest developed economies, between those with and those without access to the hardware, software, skills and Internet connections required to access new digital resources in communication, information and entertainment (Norris 2001, Compaigne 2001).

### 3. Digital divides

The digital divide is increasingly recognized as a problem, both at national and international levels. Lack of access to technology has been equated with exclusion from full social, economic and civic participation (US Dept of Commerce 1995, 1998). Across the OECD countries and increasingly in all regions, governments have sought to identify and intervene in patterns of information poverty (Bowie 2000). There has been particular focus on inter-generational disadvantage and on the identification of social exclusion in economically disadvantaged regions or in cultural minorities and low-income communities facing multiple forms of disadvantage (UK DTI 2000). In combination, information poverty and social exclusion appear to pose a long-term threat to both prosperity and social cohesion, with implications for security and civil peace if alienated underclasses are created (Giddens 2001, Latham 1998).

Governments of all political persuasions face the problem of how much priority to give to the option of intervening in the manner and extent to which people are choosing to use these technologies. They are also increasingly unlikely to favour directly redistributive solutions, such as setting up technology centres or subsidizing access to Internet connections (Meredyth and Thomas 2000). Nor are they likely to be able to achieve uniform and equal education outcomes in the area of information technology skills. Such skills are difficult to define, either in isolation or in learning contexts: it is also difficult to define common and minimum levels of capacity that citizens require. In the developed nations, especially the US, there is a shift towards an emphasis on choice, consumer preference, community-based solutions and entrepreneurial interventions.

Perhaps the most sophisticated recent response to the problem of information poverty are the 'wired community' experiments, now springing up in Australia, Europe and North America (e.g. Cohill and Kavanagh 2000, Meredyth and Thomas 2002, Smith and Kollock 1999). These are schemes that use communication technologies to reconnect neighbourhoods and assist

community renewal, by building skills and reducing social and economic isolation. The earliest models were established as private initiatives, largely as experiments in domestic consumer uses of advanced technology. More recently, however, governments have adapted such schemes as remedies for the problems faced by disadvantaged, excluded and low-income neighbourhoods and public housing estates (Gurstein 2000, Cawood 2000). Recently established initiatives include the British national education department's sponsorship of the 'Wired-up Communities' scheme, which has seed-funded public-private partnerships designed to give residents of low-income areas high-speed access to the Internet and other resources, whether through personal computers, set-top boxes or wireless technology.

Such initiatives offer a policy alternative to providing public subsidy for community technology centres or public points of access to the Internet in libraries, supermarkets, and schools. These schemes are instead supposed to be community-generated and mainly supported by private sector and non-profit agencies; they are also expected to generate substantial social security benefits as well as longer-term economic effects, through the generation of social capital (Perri 6 2001 p. 22). Local computer networks, supported by socially entrepreneurial companies, are credited with the capacity to relieve endemic social and economic exclusion, building self-help and forming commonalities of interest within communities previously isolated from the world of work outside and split internally by linguistic, racial and ethnic differences (Hallawell 2001).

It is by no means clear however, that such initiatives will ever achieve an equalization of access to the social and educational advantages provided by consumer choice in the use of technology. If anything, the gap in opportunity is becoming wider, as convergent technology reshapes both entertainment and education, exacerbating the effects of marketisation and deregulation. Broadcasting has long been seen by governments in Australia, Europe and North America as a means of fostering democracy, educating citizens and strengthening nation states (see Smith 1998). It has been subject to fine-grained positive and negative content regulation. These cultural and social policy objectives are now more difficult to maintain; it is not clear that governments have the capacity to sustain elaborate systems of regulation in the digital era (see Goldsmith et al 2001, Thomas 2001, Graham, 1998, Raboy 1996). These issues have become even more vexed with the movement of private companies into the expanding domestic market in educational games, software and digital television. These moves that have seen public broadcasters such as the BBC struggling against multiple private providers to establish a foothold in digital children's television and in the provision of on-line educational content (McNair 2000). Meanwhile, affluent parents are becoming increasingly assertive consumers of both schools and of educational products, increasingly willing to move their children out of public education.

One possible outcome of this trend is that educational inequality will increase. Another is that there will no longer be a common culture provided by either schools or national broadcasters. Instead, households and consumers will be able to pick and choose amongst an array of digitised entertainment, news, education goods and information. Individuals will be free to seek cultural goods and educational advantage for themselves and their children. They will no longer be dependent on schools or universities, any more than they are on travel agents or traditional banking institutions. The information-seeking citizen and consumer can acquire expertise and advice independently.

Some see significant social and civic benefits in these new freedoms and capacities. They anticipate an expansion of participatory democracy, as citizens equipped with information are enabled to demand transparent governmental processes and accountable politicians, to form global activist communities and civic networks (Hallawell 2001; Doheny-Farina 1996). Through email, it is argued, citizens can overcome isolation and apathy, and build 'social capital'. They can form 'virtual communities', linked by common interest, from hobbies to health care issues, ethnicity, faith and political belief (Fitzpatrick 2000). Such associations can bypass interest groupings defined by geographical distance and civic allegiance. (Nye and Kamarck 1998).

Others warn that the privatisation of education, broadcasting and communications will deprive liberal democracies of common cultural resources and civic environment, breaking down the fragile accords and safeguards built into systems of constitutional democracy. Convergence may enable individuals to set up personalised media systems, selecting only the information and entertainment they want. But they will also be able to screen out unwelcome views and information, protecting themselves from exposure to dissenting opinion. Levels of public debate will suffer (Sunstein 2001). Furthermore, far from fostering a more egalitarian domain of civic participation, new technologies may be more likely to enable those who are already active, articulate members of associational life to secure greater public attention. The articulate and educated – or the passionately opinionated and well-connected – will be able to impose their will on citizens who prefer to be silent, discrete or passive, whether through commitment to private life or through faith in those who rule (Foley and Edwards 1997, Applbaum 1998). Such danger of majoritarian domination and faction is widely recognised in democratic political thought, despite the currency of both liberal and communitarian conceptions of popular sovereignty and grassroots participation (Schudson 1998; Hindess 2001, Meredyth and Minson 2001). New uses of technology may exacerbate such endemic problems within liberal democracy, rather than removing them.

#### 4. Liberal machines?

As the debate on information poverty become of broader international concern, spreading beyond North American, Europe and other developed economies, it is clearer that so far the discussion has been exclusively framed in neo-liberal political terms. That is, debate tends to oscillate between the alternatives of neo-classical economic theory and liberal democratic sociological theory, with their common preoccupations with the rational choices of rights-bearing individuals. The debate thus hinges on whether computer networks have the potential to emancipate and equalize (Hallawell 2001; Nye 1998), or to impose governmental norms on to associational freedoms and civil society (Fitzpatrick 2000). Not surprisingly, these discussions give rise to a plethora of new rights claims: the 'right to information' (Loader 1998), 'virtual rights' (Fitzpatrick 2000) or 'digital rights' (Perri 6 2001). However, it is by no means clear what citizens are entitled to expect, or what governments in the information age can deliver.

Chadwick (2001) offers a typology of three different rationales for governmental efforts to bridge the digital divide and put citizens on-line. These three models are offered in combination and sometimes in conflict with one another. The managerial model emphasises 'efficient' delivery of government information to citizens and other groups of 'users'; the defining logic is one about the

flow and control of information. The consultative model stresses direct and unmediated contact between citizen and state, through online referenda, 'e-voting', opinion polling and 'electronic town meetings'; the problem is to ensure that all citizens have access to technology. A third model, usually expected to transcend and replace the others, is more participatory. Getting all citizens on line will create spontaneous interaction within cyber-space. Civil society will be mediated electronically; the role of the state will be limited to ensuring access and protecting free speech and rights of expression. Conflict between the rationales arises when it becomes clear that the goal of enhancing opportunities for civic participation may not always coincide with providing the most economical online service. Furthermore, despite the imperative to consult, citizens' needs are not always clear and networked information systems are not easy for the non-technically trained to understand.

Furthermore, there are technical challenges involved in setting electronic services up. Whole of government integration means linking not only the services provided by agencies but also their infrastructure, financial management and budget processes (UK Office of the E-envoy 2002). Effective use of portals requires a new architectural framework and a coherent investment strategy. Current financial budgeting systems are not designed for these kinds of initiatives. Skilled personnel are scarce, cost savings from providing services online are uncertain and the costs and benefits for agencies are uneven, hard to track and difficult to anticipate. There has been only limited action on administrative reform designed to cut red tape' and break down the 'silos' of government departments; central co-ordination and planning is often lacking (NSW Auditor Generals 2001).

It is important not to be swept away by the hyperbole about radical social and political transformations wrought by technology. Instead, we can begin to see current political aspirations and expectations are part of a longer-term pattern of political experimentation and technical adaptation. The dilemmas associated with information poverty, opportunity, access and the digital divide are not new. They are deeply enmeshed in long-standing liberal governmental problems of how to achieve security and prosperity, while policing the boundaries of private interest and public good.

Since the seventeenth century, the art of liberal government has involved the adaptation of technologies to shape citizens' conduct, habits and aspirations. State control of the economy was seen as both impossible and counter-productive. The aims of government were better achieved by monitoring the pursuit of private interests, regulating standards and agreements, and devolving responsibilities. Strategies were devised to enable people to govern themselves; innovative and adaptive uses of information and communication technologies were central to this project of governing 'at a distance' (Rose, 1999, Barry et al 1996, Callon 1987). Governments have for a long time shaped new technologies through their financial resources and policy objectives, adapting emerging information and communication technologies to meet diverse military, economic and social ends. While technologies change, such government strategies evolve more slowly. Aims such as improving public access to information, standardising administrative systems and re-orienting services around the needs of citizens are reformist aspirations with long histories.

From this perspective, we can see today's discourse of information policy as part of a long-running political and intellectual process of adapting and appropriating technology (cf Hård and

Jamison 1998). Sawhney has shown how metaphors, images and analogies pervade public policy discourse concerning technology (Sawhney 1996). The prevailing image of information networks in current scholarship and policy has been de Sola Pool's notion of 'technologies of freedom' (Pool 1983); this image has been used to highlight the problem of how technologies may emancipate people from the antique constraints of governments, corporations and ideologies. A different formulation may be needed to understand the lineage of contemporary information policy and preoccupations with security and disadvantage. As new information technologies are modified and adapted to address the persistent problems of liberal government, it is possible to see public computer networks being reconstructed as 'liberal machines'. The notion of the 'liberal machine' refers to the ways in which technologies may become instruments for the continuing negotiation and regulation of limited freedoms – (the term might recall Turing's 'thinking machines' of the 1950s, and Nelson's 'literary machines' of the 1970s: see Thomas 2000). The point is that the machinery of liberal political rule has always been improvised and imperfect. Liberal political rule has involved the continual effort (and failure) of governments to manage areas outside the scope of direct intervention – to govern at a distance (Rose 1999, Callon 1987).

The negotiation and regulation of limited freedoms is a process common to regimes that are not themselves either liberal or democratic in orientation. Indeed it is now one of the common arts of governance. Given economic internationalization, it may not be possible for any government to be entirely outside the models of governance that are propounded by bodies such as the World Trade Organisation or the World Bank and that are central to the terms of international development aid and research.

## 6. Conclusion

Whether in advanced or transitional economies, there is need for new research on the political, legal and civic implications of new social uses of technology. Regionally sensitive research is needed on the political rationalities and regulatory options shaping information policy, in order to place current fears and expectations in context. Scholarly debate has begun to shift from the question of the governability of the Internet to more nuanced studies of the manifold regulatory systems, both legal and technical, which seek to manage information networks in practice (for example Lessig, 1999). Electronic commerce has been the major focus, however. Comparatively little attention has been given to electronic government or to community networking initiatives. Further, little attention has been given to the relations between old and new media systems, much less to how they are connected to old and new political systems (though see Sunstein, 2001, cf. Owen, 1999).

Current innovations in the social use of technology, such as electronic government, exemplify both the scale and the limits of modern forms of governance. In giving people more information about government processes, technology may enable them to govern and regulate themselves more effectively, by equipping them to pursue their private interests and civic concerns within government-fostered but self-sustaining markets, civil associations and communities (Burrows et al 2000). Such innovations are expected to improve the endemically faulty and constantly repaired machinery of liberal democratic governance. They will be used as part of the imperative – and the 'productive failure' -- to predict, to track and to intervene in social and economic

dynamics that lie beyond the immediate scope of state action (Rose 1999). We are seeing a reciprocal pattern by which government seek to 'retool' communities, while government itself is re-engineered though unexpected social uses and adaptations of technology. The results are unpredictable; those researching these issues will have much to keep them occupied, as developments unfold.

There are a number of related conceptual and empirical problems on which research is needed, in both developed and transitional economies. What are the options for national regulation of information, education and media systems; to what extent is the national protection of cultural heritage, values and 'common knowledge' feasible, in the context of technological change, marketisation and convergence? To what extent can governments meet expectations of transparency, accountability, consultation and participation that they themselves have helped to create, in designing new services and fostering new consumer expectations? Are such expectations consistent with other values, such as privacy, choice and freedom from surveillance and interference? How are social and cultural agendas best incorporated into information policy? These are some of the themes that will be pursued throughout this seminar: we look forward to the exchange.

## References

- Applbaum, A. (1998) 'Failure in the cybermarketplace of ideas'. In J.S. Nye and E. Kamarck (eds) *The Information Revolution: Impacts of governance*. Princeton: John F. Kennedy School of Government, Harvard University.
- Audit Office of NSW (2001). *Performance audit report : e-government : use of the Internet and related technologies to improve public sector performance*. Sydney: Audit Office of NSW.
- Australian Bureau of Statistics (2001) 8153.0 Internet Activity, Australia Summary of Internet Activity Findings, Australia, September quarter, 2001. <http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/NT00018FEE>
- Barry, A. (2001) *Political machines: governing a technological society*. London: Athlone Press.
- Barry, A., Osborne, T., Rose, N. (1996) *Foucault and Political Reason: liberalism, neo-liberalism and rationalities of government*. Chicago: Chicago University Press.
- Bowie, N.A. (2000) 'The digital divide: making knowledge available in a global context'. In OECD (ed) *Learning to Bridge the Digital Divide*. Paris: OECD Centre for Educational Research and Innovation.
- Burrows, R., Nettleton, S., and Pleace, N. (2000) 'Virtual community care? Social policy and the emergence of computer mediated social support'. *ICS* vol.3 no 1, pp. 1-22.
- Callon, M. (1987) 'Society in the making'. In W. Bijker, T. Hughes and T. Pinch (eds) *The Social Construction of Technological Systems*. Cambridge, Mass.: MIT Press.
- Castells, M. (1996) *The Information Age: economy, society and culture. Vol 1: The Network Society*. Oxford: Basil Blackwell
- Cawood, J. (2000) 'Can public policy widen participation in cyberspace? Networks, interests and initiatives in North-West England'. Proceedings of the DIAC 2000 Conference *Shaping the Network Society*, Seattle, May 20-23<sup>rd</sup> 2000. Seattle: CPSR.
- Cohill, A.M., Kavanagh, A.L. (eds) (2000) *Community Networks. Lessons from Blacksburg, Virginia*. 2<sup>nd</sup> ed. Norwood, M.A.: Artech House Inc.
- Commonwealth of Australia (1998), *A Strategic Framework for the Information Economy* [http://www.noie.gov.au/projects/information\\_economy/strategic\\_framework/index.htm](http://www.noie.gov.au/projects/information_economy/strategic_framework/index.htm)
- Compaigne, B. (ed) (2001) *Digital Divide: facing a crisis or creating a myth?* Cambridge, Mass.: MIT Press.
- Doheny-Farina, S. (1996) *The Wired Neighbourhood*. New Haven and London: Yale University Press.
- Fitzpatrick, T. (2000) 'Critical cyberpolicy: network technologies, massless citizens, virtual rights'. *Critical Social Policy*, vol. 20, no 3, pp. 375-407
- Foley, M.W. and Edwards, B. (1997) 'Escape from politics? Social theory and the social capital debates'. *American Behavioral Scientist* vol. 40 no 1, pp. 550-561.
- Fountain, J.E. (2001) *Building the Virtual State: information technology and institutional change*. Washington D.C.: Brookings Institute.
- Giddens, A. (2001) *The Global Third Way Debate*. London: Polity.
- Giddens, A. and Hutton, W. (eds) (2000) *On the Edge: living with global capitalism*. London: Jonathan Cape.
- Given, J. (1998). *The Death of Broadcasting?* Sydney: UNSW Press.

- Goldsmith, B., Thomas, J., O'Regan, T. and Cunningham, S. (2001). *The Future for Local Content? Options for emerging technologies*. Sydney: Australian Broadcasting Authority.
- Graham, A. (1998). 'Broadcasting policy in the digital age'. In C. Firestone and A. Garmer (eds), *Digital Broadcasting and the Public Interest*. Washington, D.C.: Aspen Institute.
- Gurstein, M. (ed) (2000). *Community Informatics*. Hershey, P.A: Idea Group Publishing.
- Hallawell, S. (2001) *Beyond Access: ICT and social inclusion*. London: Fabian Society
- Hård, M. and Jamison, A. (1998). *The Intellectual Appropriation of Technology*. Cambridge, Mass.: MIT Press.
- Hindess, B. (2001) 'Democracy as anti-democracy', *Southern Review* vol. 34 no. 1.
- Latham, M. (1998) *Civilising Global Capital. New thinking for Australian Labor*. Sydney: Allen and Unwin.
- Lessig, L. (1999). *Code and Other Laws of Cyberspace*. New York: Basic Books
- Loader, B. (ed) (1998) *Cyberspace Divide*. London: Routledge.
- McNair, S. (2000) 'The emerging policy agenda' In OECD (ed) *Learning to Bridge the Digital Divide*. Paris: OECD.
- Meredyth, D. and Minson, J. (eds) (2001) *Citizenship and Cultural Policy*. London: Sage.
- Meredyth, D. and Thomas, J. (2000) 'Virtually no policy: debates on the digital divide'. *Southern Review*, vol. 33 no. 2, pp. 212-230.
- Meredyth, D. and Thomas, J. (2002 forthcoming) 'Wired High Rise: Constructing a virtual community in an inner city housing estate', *Culturelink*.
- Norris, P. (2001) *Digital Divide: Civic engagement, information poverty and the internet in democratic societies*. Cambridge: CUP.
- Nye, J. S. and Kamarck, E. (1998) 'Preface', J.S. Nye and E. Kamarck (eds) *The Information Revolution: Impacts of governance*. Princeton: John F Kennedy School of Government, Harvard University.
- Office of the e-Envoy (United Kingdom), July 2001, *e-Government: Benchmarking Electronic Service Delivery*. Available at <http://www.e-envoy.gov.uk/publications/reports/benchmarkingV2/finalrep.doc>
- Owen, B. (1999). *The Internet Challenge to Television*. Cambridge, Mass.: Harvard UP.
- Perri 6 with Jupp, B. (2001) *Divided by Information? The 'digital divide' and the implications of the new meritocracy*. London: Demos.
- Pool, Ithiel de Sola, (1983). *Technologies of Freedom*. Cambridge, Mass.: Belknap Press.
- Raboy, M. (ed.) (1996) *Public Broadcasting for the Twenty-first Century*. Luton: John Libbey.
- Rimmer, J. (2002), 'Managing the challenges of online government', Australian Public Service Commission seminar. Available at <http://www.noie.gov.au/publications/speeches/Rimmer/PSMPC.htm>
- Rose, N. (1999) *Powers of Freedom: reframing political thought*. Cambridge: Cambridge University Press.
- Sawhney, H. (1996). 'Information Superhighway: metaphors as midwives', *Media, Culture and Society* vol.18: 291-314
- Schudson, M. (1998). *The Good Citizen: A history of American civic life*. New York: The Free Press.
- Smith, A. (1998) (ed.), *Television: an international history*. Oxford: OUP.
- Smith, M. A. and Kollock, P. (eds) (1999) *Communities in Cyberspace*. London: Routledge.

- Snellan, I. (2000) Public Service in an Information Society in Peters, B.G. & Savoie, D.J. (eds) *Governance in the Twenty-First Century: Revitalising the Public Service*. Canadian Centre for Management Development, McGill-Queen's University Press, Montreal.
- Sunstein, C. (2001) *Republic.com*. Princeton, NJ: Princeton University Press.
- Thomas, J. (2000) 'Liberal machines', *American Behavioural Scientist*, vol. 43 no 9, pp. 1548-1560.
- Thomas, J. (2001) 'Digital television and its discontents: competition policy and broadcasting in Australia'. *International Journal of Communications Law and Policy*, vol. 6 Winter.
- UK Cabinet Office (1999) *Modernising Government*. London: HMSO.
- UK Department of Trade and Industry, Policy Action Team 15 (2000). *Closing the Digital Divide: information and communication technologies in deprived areas*. HMSO: London.
- US Department of Commerce (1995) *Falling through the Net: A survey of the "have nots" in rural and urban America*. Washington DC: National Telecommunications and Information Administration.
- US Department of Commerce (1998) *Falling through the Net II: New data on the digital divide*. Washington DC: National Telecommunications and Information Administration.