NetState

Creating electronic government

George Lawson

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NetState

The pace of technological change rarely has been so great; its impact has seldom seemed so important. Information and communication technologies (ICTs) are transforming the ways we live, work and communicate. Mobile phones, personal computers (PCs), digital television, virtual reality, the Internet and the like are the calling cards of an information revolution generating new forms of wealth, new types of organisation and new forms of political participation. In comparison, the rate of change in the government machine appears glacially slow. Despite the Labour Government's flurry of proposals for devolution and reforming local government, much of our system of governance seems antiquated, bound by rigid rules and strange rituals in a world full of innovation and flux. As Chris Rose, Campaign Director at Greenpeace puts it:

> 'Westminster and Whitehall are evolving separately from the rest of the nation, like some fascinating but isolated evolutionary backwater, a political Galapagos islands full of living political fossils and shambling tortoises meditatively chewing familiar foliage while the real business is going on elsewhere'.[1]

Much conventional wisdom asserts that government is inexorably weakened by the information revolution. ICTs give individuals access

to information and knowledge previously the preserve of a privileged few, opening up possibilities for people and companies to bypass governmental control. New technologies drive power outwards, across geographical and physical boundaries and away from the control of national governments. ICTs challenge the role, scope and power of government: how it pays benefits, collects taxes, combats crime and so on. They pose questions which go to the heart of what government does and how it acts.

Government needs to change, not just to cope with the challenges presented by ICTs but also to meet those stemming from changing social values, waning public trust in traditional sources of authority, the rise of business power in liberalised markets and large-scale, shared problems, such as environmental degradation, international crime and the management of a global trading system. If government hopes to be relevant, effective and, above all, legitimate in this new era, it must be prepared to adapt. This does not mean tinkering with outdated structures, functions and processes; it means finding a better fit between technology and government, being clear about what government stands for and what role it plays, being radical rather than cautious. This pamphlet outlines the part ICTs could play in this process of renewal.

My wider argument is that government needs to underpin substantive reforms with a set of guiding principles, becoming more intelligent and effective, more enterprising and innovative. I follow neither the logic of those who claim that the state is inexorably withering away nor those who believe that ICTs do little except allow government to work more efficiently.[2] Instead, I argue that the state needs to do something entirely new in the digital age, becoming smarter, capable of adapting to rapidly changing contexts and providing policy frameworks which reflect and meet changing needs. Above all, government must become *creative*: experimental, ready to rewrite rules and look at problems in fresh ways. It is in the interests of policy makers to lead reform and develop an updated set of principles, functions and structures which people can trust. After all, it is their role and authority which is being challenged.

The bulk of the pamphlet is concerned with the practical steps policy makers could take to radically reform how government and governance operate. In this chapter, I deal in more depth with the broad challenges facing government and set out the themes which could underpin a new approach to government – one fit to meet both the challenges and opportunities of the digital age.

Playing catch-up

We do not have to look far for evidence that the world has changed. Competitive advantage now rests in information and knowledge rather than land and labour. Knowledge intensive industries are booming: telecommunications, biotechnology, multimedia and so on are huge growth sectors. Corporate giants like Microsoft, Intel and Electronic Data Services (EDS) have annual turnovers surpassing the GNPs of many nation-states. The world's most successful entrepreneurs – Bill Gates, George Soros, Rupert Murdoch, Ted Turner – deal in soft industries: media, software, financial markets. In many ways, corporations rather than governments appear to be the most powerful organs of a new economic order.[3]

Complementing this shift are dramatic changes in how people of the advanced industrialised countries see their world. Ronald Inglehart has shown how many people's values are no longer centred around fulfilling basic needs like security and sustenance. Instead, most people's values are now based around meeting more 'inner-directed' goals: freedom and individualism, identity and tolerance, environmentalism and internationalism.[4] ICTs have also played their part in this process. Telephones, cars, planes, television and the Internet have brought affluent people from around the world into contact with each other. For them, the world has become disarmingly small with common frames of reference, symbols, words and brands.[5]

This conjunction between changes in values, economic shifts and technological innovation is in stark contrast to the world of governance. The past twenty years have seen a marked erosion in respect for

the public sector, which is partly attributable to the failures of a number of public services during the 1970s and partly due to the 'reinventing government' agenda of the New Right during the 1980s. These reforms sought to introduce market disciplines and entrepreneurial flair into public services. But, a decade on, government remains concerned with the same things: seeking innovation, better value for money and higher quality from its systems. The public remain sceptical about government's capacity to deliver, politicians still appear remote from many people's daily concerns and needs. Sixty three per cent of Americans say they would prefer a smaller government offering fewer services; only 27 per cent think government should do more[6]. Only 10 per cent of the British public claim to believe what government ministers say; just 16 per cent say they have confidence in the legal system, 14 per cent in the civil service and 10 per cent in parliament.[7]

As well as playing catch-up to changes in values, economies and technology, government also has to face up to a number of new challenges.

Controlling the purse strings

State levers of control are increasingly bypassed by global flows of capital, goods, services, communication and information: the click of a button sends resources from one side of the planet to the other; goods can be purchased electronically without paying VAT; software can be downloaded from anywhere directly on to a PC; virtual companies occupy digital havens beyond the reach of nation-states. The avoidance of tax, once the preserve of large companies and powerful individuals, can now be carried out by anyone with the right know-how and technology.

Without sufficient money, governments cannot pay the premiums which the digital age demands. Large investments for necessary upgrades in skills and competencies cannot be met. Governments are increasingly dependent on global markets and foreign lending, caught between the internationalisation of investment, production and consumption and the demands of national publics for better quality public

services – only affordable through higher taxes. As Manuel Castells writes, all the conditions exist for a fiscal crisis of the nation- state:

> 'The nation-state is increasingly powerless in controlling monetary policy, deciding its budget, organising production and trade, collecting its corporate taxes, and fulfilling its commitments to provide social benefits. In sum, it has lost most of its economic power'.[8]

Regulation and jurisdiction

Media diversification has reduced state control over flows of information. Interlocking ownerships, global media organisations, satellite and digital technologies all undermine state attempts at regulation. The British government could not prevent the William Straw case becoming public after his name was available on the Internet; the French government failed to ban a book accessible on the Internet describing François Mitterand's battle with prostate cancer.

Jurisdiction is almost impossible when borders have little meaning. The European Union (EU) currently applies the Distance Selling Directive, stipulating that companies must keep and store details of all their electronic contracts. Powers of jurisdiction and adjudication rest with those countries which have the 'closest association' with the contract. A consumer seeing an advertisement, making a purchasing selection, initiating a transaction and receiving goods in the UK is subject to UK jurisdiction. But as yet, national governments have few ways in which to make companies pay excise and comply with regulations in this new environment.

Monetary policy

Challenges to state control of monetary policy emerge from the rise of electronic cash. In 1970, notes and coins represented 15 per cent of all money supply; today they represent just 3 per cent.[9] As Dave Birch writes, 'just as the technologies of the PC and laser printer meant that anyone could become a publisher, so the technologies of smart cards

and superhighways mean that anyone can become a bank'.[10] Plastic cards, smart cards and electronic purses look likely to become the currencies of the digital age. Recent MORI research found that two thirds of people in Britain would feel comfortable using smart cards: 70 per cent say they would use a smart cards as a driving licence, 66 per cent as a passport, 58 per cent as a benefits card and 56 per cent as a personalised medical record.[11]

Improvements in the technology of exchange – ingots, coins, paper, plastic cards – tend to reduce the capacity of governments to control monetary flows. In the digital age, the power of national governments over any kind of monetary policy is threatened: levels of inflation, setting of interest rates and determining of money supply are no longer subject to state control. As smart cards become more widespread and are used not just for banking and shopping but also for health care, transport and entertainment, these problems are likely to intensify.

Power in the digital age

So is government reduced to a subordinate role, playing catch-up as power relations are transformed in the digital age? As more and more organisations and individuals become capable of living beyond the authority of nation-states, it is possible to envisage government in the next century as a regulator of last resort, doomed to a reduced role governing the affairs of the excluded and techno-illiterate. This is an unappealing vision. The maintenance of social cohesion and environmental quality in its broadest sense demand a competent and confident state. But the logic of globalisation and the development of ICTs point to a gradual undermining of government's authority. If government is to survive and ultimately to thrive in the digital age, policy makers must be prepared to change radically their roles and functions. There are a number of themes which can underpin such reform.

- *Creative government.* Many people dispute the capacity of government to be creative. But in the digital age, government

cannot afford to be anything else. Government needs to be flexible, free thinking and experimental, not seeking to control but to encourage innovation, acting as a catalyst rather than as a barrier to change.

- *Smart government.* Government needs to smarten up; preventing and solving problems rather than moving them around or dumping them on others; measuring the outcomes and results of its policies rather than just its activities. Government must be geared to delivering high quality services, when and where they are most needed and wanted.
- *Enterprise government.* The new type of government should resemble the best attributes of leading modern firms: streamlined, flexible, networked, collaborative, responsive, open, empowering. Government should be organised in collaborative networks rather than rigid departments, open to scrutiny rather than operating behind closed doors. Frontline staff should be multi-skilled, empowered and accountable for their decisions.
- *Holistic government.* Many of today's key problems are 'joined up': they require cross-departmental solutions. For example, school exclusions are not merely an issue for the education system, they also potentially present problems for the police, courts, housing and employment services. Yet government continues to be organised in rigid departments made for the challenges of the last century. ICTs offer the greatest chance yet to make these outdated structures relics of the past.
- *Trustworthy government.* For government to work effectively, it will need to restore public trust in the political process and reconnect citizens with the policy makers and institutions acting in their name. The first step will be to make democracy not just an occasional gesture but a permanent conversation between government and citizen. This means allowing the general public and interest groups real access to policy formulation and decision making. Government should centre on core tasks: ensuring opportunities and access,

justice and fairness while providing a collective focus people can trust.

Role play

It policy makers are to start realising these themes, they need to establish legitimacy and a distinctive set of roles. There are two reasons why ICTs should form the basis of this new story. First, they offer unprecedented opportunities to reform the principles, functions and structure of government. Second, as outlined earlier, the relationship between ICTs and government is dominated by the former. If government is to play a significant role in the digital age, it must start by putting technology in its place.

Government tends to concentrate more on cutting edge technology than on its practical uses; on hardware rather than software. This emphasis is misplaced: new technologies are rarely used in the ways they were intended for. When Bell invented the telephone, he thought it would be used for piping music from concert halls into people's homes. IBM gambled on mainframe computers and paid the price. Most importantly, for technology to make any long-term impact, it must prove useful, addressing people's real needs and wants. While the public generally accept that ICTs can improve their lives, few want to replace humans with technology. People want complementary processes: brokers to help them use technology to improve their lives. This is the value government can add in the digital age: enabling people to make wiser choices, helping them use technology to realise their goals.

For government successfully to use ICTs, policy makers should introduce three basic checks on new technologies: a reality check, a people check and a power check.

- *Reality check.* Government should check that new ICTs are really likely to find their way out of the laboratories and into the corridors of power or people's homes. Government should constantly be assessing how and in what form ICTs will emerge and what ground they need to prepare.

- *People check.* As discussed above, in order to make a long-term difference to people's lives, ICTs must prove to be useful. This means passing a people check: what need will new ICTs meet? Will they make a tangible improvement in people's lives? Are they both usable and useful?
- *Power check.* ICTs should empower individuals rather than the state. If they do, people may be more willing to participate in the political process and take on collective responsibilities. Government therefore should establish a simple power check: do new ICTs empower individuals or the state?

Reality bytes

This chapter has made a case for the radical reform of government, providing a distinctive set of guiding principles and roles to help government meet the challenges set by the digital age. The rest of the pamphlet puts flesh on this outline. The next three chapters use evidence from around the world to examine the relationship between ICTs and governments in three main areas: government services; governance; and participation and democracy. In each chapter, I test how ICTs are being used by governments against the three checks outlined above. The concluding chapter provides a number of recommendations for policy makers charged with making government relevant to people's lives in the twenty first century.

One-stop, non-stop: public services in the digital age

Weak and strong visions

There are two main stories about the impact of ICTs on public services: a weak vision and a strong vision. The weak vision is best captured by the *Government.direct* green paper issued by Roger Freeman, Chancellor of the Duchy of Lancaster under the last government. For Freeman, ICTs have the potential to bring substantial benefits to public services, empowering individuals to take responsibility for a number of issues previously the preserve of government. But for advocates of the strong vision, Freeman's story only takes us half-way to a solution. Transposing ICTs directly on to antiquated government machinery does little to solve the key problems: how government is organised and what government should do in the digital age. Rather than just make government services work better, the strong vision sees ICTs as a catalyst for radically reforming government with smarter, tailored, more effective services at the heart of reform.

Both visions agree on what electronic services will look like. For the public this means one-stop, non-stop shops: the range of government services accessible from a single entry point, at any time of the day or night via PCs, public kiosks and eventually from people's television sets. For businesses, electronic services mean both information and advice: help with tendering, subsidised consultancy, electronic marketplaces, access to business networks and so on. Both visions also agree

on the principle benefits of electronic services: organising services by life event, need, risk and opportunity; using data matching and data mining to target resources at key groups and individuals; monitoring people's needs in order to deliver personalised services.

Where the two stories move apart is in their intentions. The weak version is essentially conservative, seeking only modest, incremental changes to how government operates and what it does. Individuals and businesses take some power away from government, which after all has little business getting involved in people's affairs in the first place. Reform is made under the rubric of efficiency: government becomes smaller, cheaper, quicker and easier to manage. Essentially, ICTs allow a minimal government to track, monitor and process data, provide information, communicate with citizens, deliver and regulate services.

The strong vision is more radical, seeking to reform the very basis of government. Changing how government operates and what services it delivers goes hand in hand with transforming its culture, approach and structure. The radical vision sees the connections between delivering electronic services and reforming government: it links one-stop shops with holistic approaches to policy; geo-demographic profiling with smart government; on-line forms with creative government; accountable frontline staff with trustworthy government; cheaper services with enterprising government. The dual goals are effective services and intelligent government.

As outlined in the first chapter, my argument is that ICTs are part of an emerging landscape which demands a new type of government. Electronic services cannot be introduced onto a crumbling edifice; they should be used to help rebuild the edifice itself. ICTs can be the catalyst which changes the focus of public services: people-led, high quality, personalised, holistic, effective and creative. Introducing the strong vision of electronic services is central to making government work better in the digital age. This chapter outlines how electronic services are being used by governments around the world and discusses some of the key public policy questions they introduce.

A strong vision

Singapore is an exemplar of the strong vision of electronic services. The island's IT2000 master plan aims to 'transform Singapore into an Intelligent Island where the use of IT is pervasive in every aspect of society'.[12] The strategy is 'one-stop, non-stop' – the range of government services accessible from a single entry point any time of day, any day of the week. Fibre-optic networks deliver broadband digital and multimedia services to every home, business, educational establishment and government office. Electronic Data Interchange (EDI) networks provide a seamless information flow between agencies.

Singapore has introduced a number of services aimed directly at businesses. TradeNet is a general purchasing network for the private sector with the capacity to network, share information and pay charges electronically. PortNet connects eighteen government agencies, cargo agents, shipping agents and freight forwarders to make the import and export of goods a paperless system. A single electronic document is available which is returned with the necessary approval within an average of 30 minutes. Ninety five per cent of customs declarations are now electronic. Time spent on customs is down 60 per cent and costs by 50 per cent, equivalent to savings of approximately $1 billion per year.[13]

Singapore's government estimates that for each dollar spent as an initial investment in computerised services, it has received $2.71 back. Time spent registering a private company has dropped from 50 to eight days. Passports are checked in fifteen seconds. Admission times to hospitals have been cut to one minute as computers take over administrative chores from registration to payment. A network for doctors, Medilink, has been introduced to pool knowledge between practitioners, providing on-line consultation and diagnosis, even telesurgery. The public have access to their medical files through smart cards and can download prescriptions to hand held devices. Both for the public and for businesses, services are user-friendly, high quality and effective.[14]

Singapore has also carried out an intensive public awareness programme to wire up people, particularly the worst off, to government

services. Concerted programmes in housing estates, community centres and schools stress the benefits of ICTs. A television programme, Cybertime, and a permanent 'Hall of IT' are showcases for national excellence, demonstrating to the public how and why Singapore is leading the world in the practical use of ICTs. While its authoritarian regime makes it an undesirable *political* model, as a technical user of ICTs, Singapore is showing the world how to use electronic services in enterprising ways. The government has implemented a strong vision of electronic services; a creative revolution with tangible benefits for the public, businesses and government.[15]

Weak visions

National governments in the West have tended to adopt weak rather than strong visions of electronic services. This is hardly surprising. Plural interests, the diffusion of power and regular elections tend to engender short-term, rather than long-term, thinking sweeping reform programmes which are difficult both to introduce and administer. But with most countries now finding electronic services effective ways of achieving 'more for less' and potentially useful tools in re-engaging public trust in government, many are beginning more concerted drives to provide electronic services.

In the United States, two bills – the Paperwork Reduction Act 1995 and the Paperwork Elimination Act 1997 – intend to remove paperwork from federal government. Food stamps are gradually being substituted by electronic benefit transfer cards. Newark International Airport recently introduced an immigration control system, INSPASS, which allows US citizens and regular visitors to use a smart card, verified through hand geometry, to pass quickly through various checkpoints around the airport. The system is now being installed in JFK and Toronto airports.[16] Massachusetts General Hospital is already using video-conferencing routinely in pathology and radiology – telemedicine and teleconsultation are fast becoming realities. In Arizona, public information kiosks provide a tool kit for people in the early stages of law proceedings, listing key questions to ask, explaining

how to fill in forms and providing legal advice.[17] One of the most important demonstrations of electronic services is underway in New York, where the housing authority has issued touch screen, self-service kiosks providing users with information, preparing applicants for interview and helping them make decisions on available housing suited to their needs.[18] This system pioneers a new type of government service: smarter, more effective and tailored to individual needs.

The Canadian government has introduced wide ranging electronic services. SchoolNet connects all schools, libraries, colleges and universities into a single network, pooling information and resources, offering on-line teaching and downloading homework. Teleconferencing, e-mail and voice mail networks are all well established in health care. In 1995, 3.9 million Canadians filed their tax claims electronically; 495,000 paid electronically. New Brunswick has introduced a network which provides addresses, maps, phone numbers, floor plans of buildings and details of any special needs to emergency services on their way to an incident.[19]

Some governments have explicitly concentrated on the benefits of electronic services to business. In Finland, a national business network pools 'know how', providing a data bank which can be mined for research and development.[20] In the UK, Kirklees council has established itself as a 'mother' site for access to World Wide Web sites in adjacent towns, providing a base for businesses looking to invest in the area.[21] In Australia, electronic services provide businesses with up-to-the-minute information on tenders which firms can then lodge in sealed, secure electronic boxes.[22]

Australia is also home to the most far-reaching attempt to fuse the reform of government with the needs of its worst off citizens. Over 2,000 touch-screen kiosks in 320 job centres across the country enable users to search interactively for jobs from a national database.[23] On the one hand, this initiative has benefits for government: data-sharing cuts down fraud, improves the efficiency of services and can lead to substantial savings. On the other, the system provides job seekers with precisely what they need: personal control and empowerment over their life-chances, crucial if they are to build networks and find sustainable routes into paid employment.

In Europe, a number of countries have introduced electronic 'citizens' cards'. These cards – Dankort in Denmark, TASS and Vereda in Spain, INFOCID in Portugal – contain a PIN code allowing an individual secure access to the range of government services through touch screen kiosks and PCs. There are plans to use the cards from television set-top boxes as and when the technology becomes available. Vereda has already issued 7 million cards across Spain; by the end of the century the government expects the whole country to be connected.[24] The reason why these schemes are popular is obvious – they are people led, delivering services quickly and effectively for a range of concerns when, how and at whatever level people demand.

Government.direct?

British governments have been slow to see the benefits electronic services can bring. Until relatively recently, government policy was fragmented; there was neither a strong nor weak vision of electronic services. There are tentative signs emerging of a change of heart: *Government.direct*, the Freedom of Information Act and the support of senior figures in the government have given fresh impetus to electronic service delivery. But while most initiatives remain private sector and local government led, there is little chance of an innovative, strong vision of electronic services being adopted.

As part of the G7 Government On-line project, the Conservative government established a Central Communications and Technology Agency (CCTA) inside the Office for Public Service to coordinate improvements in government services. It provides users with a single point of entry for information from 115 organisations and 60 government departments and agencies, including ministerial speeches, press notices and statistical data. The service is currently accessed 120,000 times per week.[25]

The *Government.direct* green paper emphasised better on-line services to businesses and citizens including: collecting taxes, granting licences, administering regulations, paying grants and benefits, and procuring goods and services. The green paper envisaged touch sensitive,

easy to use public terminals, one-stop shops available 24 hours a day, seven days a week with information secured by biometric data, smart cards and PINs.[26] The Labour government's forthcoming green paper, *Better government,* is expected to endorse these initiatives while calling for more widescale changes to how government is structured. The first electronic form, for registering as self-employed, went on-line in December 1997, with technology provided by EDS, Microsoft and NatWest. The minister responsible, David Clark, called it 'the first step towards providing 24-hours government services into the home'.[27] There are now more than 600 government forms available via the Internet.[28]

The Private Finance Initiative (PFI) has had mixed success in delivering electronic services. The Post Office is aiming to phase in an automated transaction processing system developed by SEMA. London Transport recently signed a £250 million deal with EDS to provide contactless swipe cards on the tube. But the Post Office's Pathway project, introducing swipe cards for benefit claimants, has been chronically delayed. As yet, only 205 out of a proposed 19,000 automated post office counters are up and running. There is considerable doubt over the future of the programme with estimates of savings considerably downgraded from the initial £150 million.[29]

There are a number of initiatives underway in both the private and public sectors aimed at improving education and training. IBM recently launched six programmes across Europe using ICTs to deliver training specifically targeted at unemployed people.[30] UK NetYear, a consortium including Cisco, Sun Microsystems, ICL and the Telegraph Group, aims to connect 10,000 schools to the Internet during 1998. The Department for Education and Employment (DfEE) is running a range of initiatives around the theme of 'connected learning' to underpin the National Grid programme.[31] As part of the Genesis programme to provide a range of community information electronically, Cumbria County Council is working towards a virtual university providing distance learning courses which use a combination of the Internet, pre-recorded lectures and video-conferencing.[32] Virtual learning experiments have been carried out at Birkbeck college in

London with notable success over the past couple of years.[33] The Janet and SuperJanet databases are one-stop shops for academic research, pooling a wealth of information in a national bibliographic database and university network.[34]

The government's plans for modernising the health services are heavily dependent on ICTs. Early in 1998, Frank Dobson laid out plans for an NHS information superhighway featuring a national intranet connecting every hospital and surgery, an on-line 24 hour information service staffed by nurses, new databases for linking research and development programmes, internal e-mail systems, EDI linking GPs to pharmacies and on-line booking for outpatient appointments.[35] The NHS *Patients Not Paper* programme includes 25 recommendations for using ICTs including: integrated clinical workstations, healthcare information support systems and electronic paper records, all currently being piloted.[36] In East Anglia, vital signs are transferred between ambulances and hospitals to save time and deliver high quality treatment for patients.[37]

At Glasgow University, a project is underway to provide the public with touch sensitive screens including information and advice about smoking, sex, AIDS and travel accessible from chemists, health centres, sports centres, post offices and pubs.[38] BT laboratories is currently developing an advanced system of telecare in which sensors situated in elderly and disabled people's houses analyse daily habits and collect signals in a control unit which is regularly polled by a central computer. If anything unusual occurs, automatic messages are sent to the individual or carer. Eventually, the system plans to monitor blood pressure and pulse rates as well.[39] Both of these initiatives are examples of how technology can be used creatively to deliver tailored services to the public where, when and how they are most likely to need and use them.

Local initiatives

Local authorities are beginning to see the benefits electronic services offer, particularly in local regeneration projects. In Hackney, the proposed HiNet intranet is seen as a 'window of opportunity' to regenerate

the local economy and provide Hackney with competitive advantage. The plans include the creation of electronic 'bulletin boards' as databases to aid local recruitment. The council is considering introducing electronic information for council tax and budgets, as well as publishing schedules, agendas and reports on-line. One-stop shops will allow users to request a service, fill in a form, make a job application, monitor or complain about a fault, make a suggestion or even register a vote. The council hopes to ensure access to the intranet through 2,000 publicly available networked PCs and touch-screen kiosks.[40]

Newham council is setting up a seamless public information and service network, ATTACH, funded by the EU. The network uses partnerships with other councils, universities, TECs and the voluntary sector to provide integrated information and advice on training, employment, benefits, the law and so on.[41] In Southampton, the ROMANSE road management scheme uses a mixture of kiosks, the internet, teletext, local radio stations and CCTV cameras to inform people about travel in the city, providing real-time pictures of congestion in the local area.[42] In Ipswich, buses have been fitted with satellite tracking systems to show Internet users exactly where they are at all times.[43]

A recent report into how the proposed Greater London Authority might work called for the largest, most ambitious city-wide intranet every constructed: LoCiNet, the London Citizens Network.[44] The intranet could deliver a range of electronic services to the public: paying taxes, viewing a timetable, ordering a skip, paying a fine, applying for a licence, making a complaint, voting. Rather than search by organisation or function, people will be able to search by: *life-event* – birth, marriage and the like.; *need* – such as getting a parking permit; *risk* – unemployment, pollution and so on; and *opportunity* – for example, unused land. Access will be ensured through a modem, digital television or touch-screen kiosk with call centres available as back-up.

Key challenges

To begin to tackle those social problems the public consider most crucial – ill-health, low educational standards, high levels of crime,

environmental degradation, unemployment and crumbling infrastructures – governments must restructure for the digital age, becoming smarter, holistic and more effective.[45] A valuable tool in this restructuring will be the electronic delivery of services. Government will have direct insight into what individuals need, will be capable of providing information and advice enabling individuals to make better-informed choices, and will provide high quality services from single entry points, leading to more cross-departmental working. By implementing a strong vision of electronic services, government structures can be transformed.

But this vision can only be realised if policy makers answer several challenges. Will people really use electronic services? How will policy makers guard against 'information exclusion'? How will electronic services be paid for? How can deep, 'joined-up' problems be most effectively tackled?

Using electronic services

Just as ICTs only make a long-term impact if they are useful, so electronic services will only be popular if they make a tangible difference to people's lives. This means making services accessible, easy to use and affordable. It also means breaking down cultural as well as technological barriers. The government will need to fight a concerted battle over hearts and minds alongside its programme to educate and train people in using new technologies.

Easy to use and accessible services go hand in hand. The services already introduced via PCs are a first step but to make a significant impact, government needs to go beyond the minority of people who have the access and skills to use computers. They need to experiment more creatively with touch screen public kiosks, ensuring that they are in convenient places: pubs, high streets and shopping centres as well as libraries and community centres. But public kiosks are not enough; in fact they are unsuitable for a range of services. The queue to fill in a tax form would stretch for miles even if people didn't mind others looking over their shoulders. It is hardly appropriate to carry out community care assessments from a kiosk.

The crucial move will be to get public services into people's homes. Digital television and set-top boxes using smart cards, voice recognition or point and click software could deliver services without the need for a computer, modem or even a keyboard. The government must make sure both that set-top boxes are affordable and that they carry useful services. Chris Smith recently announced that set-top boxes are to be subsidised and that the old analogue signal will not be switched off until at least 2010.[46] But even then, there will still be a number of people who are uncomfortable with the new technology. National information campaigns will be crucial. Call centres manned by skilled professionals should be available as a back-up. ICTs need to be embedded alongside face-to-face service provision, not used to replace it.

Delivering useful services means providing access from a single entry point whether through a phone call, web site or television, 24 hours a day, seven days a week. The public should be able to receive information and advice simply, searching by life event: getting a mortgage, finding a job, repeating a prescription, obtaining road tax, getting tax advice and so on. But this type of tailored, holistic service needs to be carefully regulated. Getting an MOT means being able to cross-reference details of car insurance with the DVLC. But it doesn't mean you want information on how to get a passport or a dog licence at the same time. Services will need to be smart, capable of adapting to individual needs and demands.

The campaign to win over hearts and minds will not be easy. Many people are distrustful both of government and electronic services. The public needs to be persuaded that electronic services can deliver tangible benefits and that government is becoming smarter and more trustworthy. Safeguards and security will need to be stressed. Officials should be prepared to respond quickly and efficiently to requests with replies processed and action taken in as short a time frame as possible. Flagship policies which clearly demonstrate the benefits of electronic services should be highlighted: voluntary smart cards which bundle together useful services and on-line tax advice and calculations for the public; a single point of access for advice about copyright, patents and

grants for businesses. Some people, for example the old and disabled, will need specialist services and facilities, for example braille kiosks and sensor-based home systems.

However public services are provided, they must be the right services – tailored to needs, based on life events, interactive and useful. There is no point in digitising poor services. As Vin Sumner of SEMA comments, 'People deal with government in lots of different ways. They don't necessarily want to understand the complexities of how they do this, they just want to do it conveniently'.[47]

Information exclusion

Government has a major role to play in preventing a potential danger of the digital age: information exclusion. Recent figures from the Henley Centre for Forecasting show that 62 per cent of people in Britain have never used a PC and 86 per cent have never used the Internet; only 17 per cent say that computers are essential or important to their daily lives. Uses of ICTs are far more common among professionals, young people and men than among women, the elderly and poor people.[48] The key for steps for government and its newly founded Social Exclusion Unit are to ensure the provision of access, education and training, furnishing people with the opportunities and skills they need to use ICTs. This could include charging phone operators a small levy to pay for the introduction of telephone lines into disadvantaged areas.[49] Such an innovative step would be a signal of intent from a preventive, smarter government.

Electronic services will be delivered via electronic signatures. Although electronic signatures actually add an element of security to current security systems, the public remains unconvinced. It will be a crucial role of government orchestrated public awareness campaigns to inform and convince people, particularly those most in need and most sceptical – the elderly, the unemployed and the poor – of the security of operating systems. As William Heath, Chairman of Kable, puts it, 'government will have to be sure that its information is secure, and is *seen* to be secure'.[50]

There is likely to be a time lag between when people use electronic services for information, when they use them to communicate and when they eventually use them to pay for goods and services, perhaps from electronic purses with electronic cash. The steady growth of virtual retailers, the relative cheapness of electronic goods and services, the wider availability of smart cards, the increase of non-face-to-face communication and the continued development of secure systems should all act as positive drivers of change. Given time, most people should feel safe using electronic services.

Paying for electronic services

Electronic services should be funded through co-governance. Certainly, government will need the private sector, not least if it wants to convince commercial carriers to reserve at least one digital television channel for public services. But the government also has much to offer the private sector. There are material profits to be made from the reduced costs of public services and intellectual profits available from the information stored on public databases. The crucial issue is whether the public trusts the government to trade this information without compromising their privacy or security.

The current framework for funding services – PFI – is a poor model: it is sluggish and hidebound, often so much so that only one bid is tendered for each contract. Because government is so fragmented, each department tends to contract out individual tenders, even though combined tenders across departments may work more effectively and deliver better value for money. Because the public sector is so restricted by Treasury rules, it is disadvantaged against private bidders with their flexibility, expertise and depth of pocket. A key part of reforming government for the digital age will be to relax some of these rules on public sector borrowing, allowing co-governance and partnerships to flourish. As government becomes more holistic in design and implementation, so PFI should work more efficiently.

The private sector will pay handsomely for access to public sector databases. For the public, this presents both benefits and risks. On the

one hand, data-sharing can lead to better quality, individually tailored services. On the other, data-matching could open the way to discrimination, for example by insurance companies using health databases to assess people's risk of serious illness. Personal data needs to be guarded jealously by government, locked behind encryption, firewalls and software gateways. Government should be prepared to use privacy enhancing technologies to keep non-essential information secret. But under controlled conditions and subject to updated codes of practice, Government could allow businesses to carry out limited data-matching and data-mining on these databases. Ensuring privacy will be a crucial test for government in the digital age, providing both the opportunity to restore public trust but carrying with it the danger of heightening alienation.

Over time, there may be a range of innovative schemes in place to fund electronic services: charging people for tourist information, obtaining a licence, specialist advice and so on; business subscription services for information, advice and expertise, with additional services the preserve of paying members. However, if the government is to ensure the widest possible access to networks, they must be free.

Public services in the digital age

Electronic services promise a great deal: all of those described above pass the reality test, most pass the people test and some pass the power test. But electronic services will not just be a question of the government ensuring supply. Equally important will be public demand – and the public will only use electronic services if the content is right and if access is affordable and straightforward. To really make electronic services work, policy makers will need to go beyond a weak vision which just digitises poor services and embrace a strong vision which resets the tenets and focus for public service delivery. It is up to policy makers and their partners in the public, private and voluntary sectors to deliver both the government and the services which stand up to these challenges.

More for less: governance in the digital age

More for less

Many governments around the world are facing the same problem: how to do more for less. The public is distrustful of politicians and political parties, and is generally unwilling to pay more taxes yet it demands that key social problems – ill-health, low educational attainment, unemployment, high levels of crime, poor quality environments, crumbling infrastructures – be solved through better quality public services.

Most governments are unable to tackle these problems effectively: solving them demands both new, politically unacceptable, levels of tax revenue and cutting across long-established divisions between government departments. As they stand, each department engages in 'turf wars' to retain its autonomy. Functional barriers reduce departments to administering problems rather than seeking to minimise or prevent them. Annual spending rounds reinforce departmentalism. Few ministers freely accede to cross-department working; after all, careers are rarely furthered when the budget and scope of a department are reduced. As a result, what often registers as political success is activity rather than outcomes; spending money rather than using it wisely.

The need for reform is well recognised by political leaders around the world. The 'reinventing government' agenda in the 1980s devolved power away from central government, achieving some success in making government more efficient. But the reforms failed to make

government any more effective. As politicians and civil servants recognise the need to reform governance (defined here as the processes and structures of decision making by senior policy makers throughout government) to keep pace with the changes described in the first chapter, ICTs are increasingly being seen as valuable tools for improving how the machinery, processes and structures of decision making work.

ICTs reduce the capacity of nation-states to act in a number of areas: taxation, regulation, jurisdiction and so on. But these problems cannot be tackled effectively through structures inherited from the Victorian era. The new challenges ICTs bring, just like cross-cutting social problems, are not contained within rigid departmental silos. Policy makers must be prepared radically to restructure government, making it streamlined, smarter, responsive, enterprising, effective and creative. Equally important will be to reverse the most damaging aspects of official culture, turning secrecy into openness, measuring outcomes rather than activities. In this chapter, I outline examples of how ICTs are being used creatively to reform governments around the world and lay down some of the key challenges facing policy makers serious about creating intelligent governance fit for the digital age.

Smartening up

Trans-governmental organisations, particularly the G7 and EU, have been quick to spot the potential benefits of electronic governance. The Bangemann report issued by the EU in 1995 encouraged the growth of 'single window' web sites for public information about the EU and set up the Interchange of Data between Administrations (IDA) programme, establishing Intranets to exchange information freely between departments.[51]

While the G7 and EU provide inter-governmental leadership, a number of national governments are also leading the way in electronic governance. The best known and most developed of these is Singapore. As part of the island's IT2000 programme, the government: provides funding for training, research and development into ICTs and uses cross-departmental programmes to break down functional

and administrative boundaries. Singapore has never isolated ICTs from wider societal processes but instead built them in at key stages of decision making. The benefits are obvious: effective governance delivering more for less.[52]

Other Asian countries, particularly Malaysia and South Korea, have followed this example. The creation of a 'Multimedia Super Corridor' in Malaysia includes the creation of two 'smart cities': Putrajaya and Cyberjaya. The former is to be the new governmental and administrative capital, allowing for information and communication to be processed quickly through intranets and EDI. The latter is to house multimedia firms at knockdown rates. Microsoft, Apple and IBM are among the leading global players with seats on the cities' advisory boards. In South Korea, the infrastructure is being developed to connect central and regional government with key agencies: research institutes, administration offices, universities, libraries and so on. In Southeast Asia it seems, governments have been ready to discard old systems and start afresh, with ICTs at the centre of reforms.[53]

Open wide

Most governments in the West developed with an instinct to keep information and decision making secret. Conventional wisdom asserts that it is easier to govern with restrictions on flows of information rather than through transparency. In the digital age, this 'truism' is turned on its head. Governments are more effective when information is processed and shared swiftly and efficiently, promoting better quality decision making and including public consultation to match policies with real needs. But faced with entrenched institutional and organisational constraints, without the capacity to begin afresh and with sceptical publics unsure of government's capacity to deliver, most Western governments remain stuck with a culture of secrecy. They have been slow to reap the benefits of electronic governance.

In the United States, All Gore led the creation of the National Information Infrastructure (NII). The NII was supposed to administer a seamless broadband infrastructure throughout the nation. But the

legislation was watered down, derailed by political wrangling in Congress. Current federal policy is to support best practice and set up local pilots rather than lead the way in reforming and streamlining governance from the centre.[54] But it is not enough for central government just to commend best practice. Meeting the challenges of the digital age means reforming governance, particularly the highest echelons of national government.

There are a number of innovative examples of Western governments using ICTs to make governance more effective. In New Brunswick, Canada, the courts, the police and correctional institutions are connected in a single, integrated justice system.[55] In Finland, a national criminal register provides a huge database accessible to police all over the country; an electronic national voting system enables votes to be processed and published within an hour or two of polls closing; video-conferencing is regularly used in meetings to link people from remote locations, saving valuable time and resources.[56]

In Australia, a single government homepage serves as the front-end for a wealth of government information and services, breaking down functional departmental boundaries.[57] Australia is also a pioneer of data-matching. The government has recently begun to match Department of Social Security records with Tax Office, Education, Employment and Training, Housing and Regional Development and Veterans Affairs records in a bid to combat fraud. Savings are estimated at $200 million per year. Further intranets and EDI programmes are being developed.[58]

ICTs are also being used to create collaborative networks which tie together previously disparate units of governance. On the borders between Germany and the Netherlands, 80 authorities are engaged in the EUROGIO project, using e-mail to overcome national boundaries and provide common solutions to common problems.[59]

Better government?

Government.direct stood for a new approach to electronic governance. It included plans for an 'internal linking system' ensuring governance

at all levels are provided through a 'unified face' to the public, paving the way the development of a government intranet.[60] This intranet, with technology provided by Cable and Wireless, is now up and running, allowing for secure communication between civil servants, private offices and ministers.

However, ICTs are still primarily seen in government as a means to improve communication rather than as a central component of policy formulation. ICTs are still confined to drawing up an initial document which is then printed out and circulated rather than as a means to carry out ongoing discussion and negotiation. The real benefits in electronic governance will emerge when ICTs take on this role, becoming used routinely in policy formulation. But until there is sufficient trust, both culturally and in the technology, ICTs will continue to play a marginal role in governance.

Electronic governance has moved on from the days of MINIS, a system first introduced in 1982 by Michael Heseltine to allow ministers to track daily costs and spending in their departments.[61] Cab-e-net, for example, will soon provide ministers with press statements, policy information and details of other ministers' diary commitments.[62] David Clark, Chancellor of the Duchy of Lancaster, recently launched the first ministerial red boxes accessible via fingerprint and voice recognition. However, it subsequently emerged that the red box was only a mock-up – the biometric data it used failed the government's own security standards.[63] We remain a long way from having a system where British ministers can monitor what their department buys or spends by the minute on an electronic dashboard.

The Conservative government did succeed in making public access to governance easier. A single homepage run by the Government Information Service (GIS), a coordinating body for on-line government information, receives 200,000 hits per day from around the world, 40 per cent of which come from the UK. Four hundred public organisations, including government departments, local authorities, police forces and regulators, are available through the site.[64] In 1996, Parliament set up its own web site with access to Hansard, POST and library research papers, although select committee reports are yet to be included.[65]

One of the most important examples of this new approach to electronic governance is the Social Security Administration Bill of 1996, allowing the DSS to cross-reference records with the Inland Revenue, Customs and Excise and the Home Office in a bid to reduce fraud and cut down on red tape. Data-matching by the Benefits Agency, which compares housing benefits, student grants, Inland Revenue and Social Security databases, led to 50,000 referrals for investigation and estimated savings of over £26 million in the programme's first twelve months.[66]

Local initiatives

While both internationally and, at least to some extent, nationally, governance is going digital, there are also numerous examples of local authorities (LAs) using ICTs to improve their effectiveness. A report by the Future Foundation found that LAs are introducing intranets faster than the private sector.[67] Swansea council has wired every councillor to a central intranet.[68] Hertford County Council has been one of the first agencies to introduce geo-demographic profiling to evaluate resource allocation. The council now uses data from social services, police, education and welfare registers to produce maps of young people at risk in the area, allowing the council to see where problems lie and to direct resources and strategy accordingly.[69]

These techniques are also being used in education and health. SuccessMaker, a software program which matches a child's profile to a tailored work schedule, is being used to find pupils' weaknesses, allowing these to be targeted and individual learning plans developed. LEAs in Croydon, Staffordshire and the Vale of Glamorgan are currently piloting a scheme which mines schools databases to provide daily league tables measuring schools' levels of achievement.[70] The NHS is already using information collected by GPs to form a database from which to map health trends.[71]

Another innovative example has been undertaken by Labour MP Anne Campbell in Cambridge where, in association with Andersen Consulting, six public kiosks have been introduced to link information

and advice on childcare, benefits, training and job opportunities. The programme is targeted at single mothers who lack both the time and the resources to deal with the different agencies involved. By situating the kiosks in accessible locations and making them relatively easy to use, the programme has ensured a high level of take-up, receiving over 400 hits per day.[72]

Key challenges

If it were possible to begin from scratch, electronic governance would look quite different to the current system. An intranet would allow policy makers to download information and communicate with each other through a PC, laptop, mobile telephone or kiosk using encrypted PINs and smart cards. Meetings could be run over the central intranet and decisions authorised through electronic signatures. EDI systems with a hierarchy of levels secured by biometric information would provide a seamless data flow, sending details of performance and outcomes to relevant agencies.

But of course, policy makers in central government cannot start entirely from scratch. In Britain, as in much of the Western world, governance is run through inherited structures hopelessly ill-equipped to deal either with inherited problems or the new challenges ICTs bring. But this does not mean that reform should be piecemeal. ICTs can help to make governance work better, becoming smarter, flatter, responsive, holistic and open. But this will require the radical vision, energy and commitment of policy makers, particularly those at the centre of government.

Holistic governance

If policy makers are going to play significant roles in people's lives in the future, governance is going to have to change radically. The world has changed, becoming de-layered, open and streamlined while processes of decision making remain resolutely stuck in the past: hierarchical, secretive and rigid. Above all, the world has become more holistic: networked, connected and interdependent as never before.

The first step for reforming decision making is to accept the rules laid down by this holistic world.

First of all, policy makers should use EDI and intranets to work more efficiently: sharing information, introducing swifter communication procedures, using e-mail and video conferencing for routine meetings, enabling many decisions to go virtual. Officials should have the capacity to act quickly and intelligently.

Second, electronic governance means integrating financial control through internal audits and an end to annual spending rounds. Rather than measuring activities, policies should be measured by the effect they have on people's lives. The success of decision makers should not be dependent on how much they spend but by how much difference their policies make to levels of trust, social capital and people's quality of life. This means changing deep seated cultures of secrecy and departmental rivalry. In time, civil servants will begin to see the value of collaborating and opening flows of information as their performance becomes assessed by results and the performance of networks across government become inextricably linked. Holistic governance means a more collaborative, open culture.

Ensuring data security

But using intranets and EDI means sharing private information. If the responses to *Government.direct* and *Your right to know* are anything to go by, ensuring the security of information is the issue which most concerns the public and pressure groups. If data is to be shared across levels of governance and used to make important decisions, how can it be securely safeguarded?

Where data-matching has considerable value in cutting fraud, for example in social security, the public are likely to support it. However, the use of data-mining, particularly by private firms for market research or by the government for covert aims, will be unpopular and likely to attract criticism. As outlined in the last chapter, public databases are potentially substantial sources of government revenue. But their use will need to be closely scrutinised. Stronger data protection

laws and codes of practice to guard against misuse should be introduced to monitor and regulate information barter.

Government should secure data through encryption and, where necessary, hardware or software firewalls. A hierarchy of levels should be accessible only through different protocols and passwords, including PINs and biometric identification. While each are susceptible to individual breaches, the combination of several levels of security minimises damage from external hackers, although it will be more difficult to prevent abuse by insiders.

Rolling out the networks

But this vision of electronic governance will only be possible if the right infrastructure is in place, including high capacity fibre-optic cables, ISDN, satellite-based and other wireless networks. Singapore is paving the way to a large scale roll-out of such an infrastructure. But in Singapore, the underpinnings to the infrastructure were already established, leading agencies and the general public were persuaded to support the government initiative and long-term political stability without fixed terms of office allowed policy makers to plan ten or twenty years ahead rather than just four or five. The same cannot be said of Britain. The cost of such networks is prohibitive, the political culture is short-term and the public has yet to be convinced of the benefits of electronic governance.

There are several options available for policy makers. In principle, government could bankroll an initial investment in high capacity networks and then rent out the networks to partner agencies, recouping its initial investment through rental charges and public expenditure savings. But because government has difficulty in raising capital on such a large scale, it is more likely to resort to partnerships between the relevant agencies: central and local government, the private sector, LEAs, health authorities, criminal justice institutions and so on, as each phase of the roll-out demands. Crucial steps, as outlined in the previous chapter, will be to reform both PFI and Treasury rules on public sector borrowing so that public sector agencies can become

more flexible and adaptable, in effect more like the firms they will be cooperating with, but with social values rather than financial profits as their focus.

Equally important are issues around the development of a software infrastructure. Each strand of governance – government departments, local authorities, the police, schools and so on – requires different data standards, making EDI covering all of these agencies a logistical nightmare. A potential solution is to create a central body defining standards for data flows between tiers of government, with firm rules sanctioned by new, reinforced data protection and privacy legislation. It will be crucial that policy makers at each of these levels trust the technologies they are using. They also need to trust each other. If governance is to work, cultural as well as technical boundaries will need to be broken down.

Virtual decision making

In Finland, government meetings are already going virtual, with video conferencing and e-mail common ways of making routine decisions.[73] This has obvious benefits. People who can't attend meetings can attend from remote locations. Not only information but also communication processes stand to be improved. Those who dislike face-to-face meetings may find electronic decision making a more level playing field. Electronic signatures and PINs can be used to sanction decisions, raising people's trust in ICTs. More video- conferencing, if it acts as a substitute for journeys, also has the potential to reduce pollution and energy costs stemming from car and plane use.

However, physical interaction during policy negotiation remains a vital part of decision making. The capacity to look into people's eyes, to note changes in tone or to gauge the nervous glance are all vital tactical tools. It is unlikely that policy makers will feel at ease in virtual surroundings for some time yet. However, the successful use of video-conferencing in business and the growth of virtual offices show that it is possible to move away from the standard board room meeting. The further application of electronic communication in governance may well lead over time to more decisions being made electronically.

Governance in the digital age

Making governance work better is a crucial part of making government itself more relevant in the digital age. But ICTs will not automatically improve bad systems of decision making. They may change some of the ways decisions are made. They may even help to break down some of the organisational constraints that make governance ineffective. But they cannot do these without the vision and will of policy makers themselves and without concurrent changes to cultures of secrecy and short-term processes like annual spending rounds.

Using the three checks outlined in the first chapter, this picture becomes apparent. All of the technologies I describe above pass the first check: reality; many pass the second: people; but none pass the third: power. The crucial point is that ICTs offer policy makers an opportunity; a chance to make their own systems work better so that they can make clearer, better quality decisions. ICTs enable and facilitate policy makers to work more effectively. But this relationship is not a given. Bad governance can still make good use of ICTs.

Power to the people: participation in the digital age

Power to the people

As outlined in the first chapter, the last decade has seen a decline in trust in mainstream politics, political parties and political leaders across much of the Western world. The vacuum left by the decline of old ideologies of 'left' and 'right' has been partly filled by the emergence of new networks of common interest and identity. These movements respond quickly and effectively to meet people's needs and aspirations, many of them through ICTs.

Britain is feeling the fall-out from this disillusionment in mainstream politics more than most other European countries. Turnout in elections is relatively low: the 1997 national election saw the lowest turnout in recent times; only 40 per cent of people vote on average in sub-national elections, the lowest in the EU; in January 1998, just 7 per cent of the electorate voted in a local election in Liverpool.[74] The Labour Party has responded by launching a high profile campaign led by the Prime Minister and Deputy Prime Minister aimed at modernising local democracy, including proposals to introduce electronic voting.[75] But until the public has real chances to influence policy making, it is likely that ever increasing numbers of people will turn away from mainstream politics.

This is in direct contrast to the emerging digital community. The Internet has spread in anarchic, chaotic and creative fashion, relying on the collaboration and good will of users, and resisting attempts at

formal regulation. Downloading information, joining a newsgroup, setting up a home page and accessing a web site are all free. There are no dominant power structures, no government, no police and no laws. As Professor Peter Cochrane of BT Labs puts it,

> 'writing about the Internet is a bit like trying to shoot a speeding bullet with a bow and arrow the net is an evolutionary beast moving at an awesome pace creating new opportunities and challenges for us all.'[76]

Proponents of electronic democracy see huge possibilities in this culture: empowered individuals, self-regulation, new forms of cooperation, networks of identity spreading across political and geographical boundaries. Not only do ICTs offer the possibility to rejuvenate political cultures in the West; they also could also help liberate those living under totalitarian regimes. Just as the media helped to mobilise opposition to the former communist regimes in Eastern Europe, so rebels in Chiapas used the Internet to generate worldwide support against the Mexican government; organisations like Amnesty International and Greenpeace use ICTs to publicise global campaigns. For proponents, emerging technologies can be the basis for a new type of citizenship: empowered, collaborative and global. There is little, it seems, regimes can do in the face of such pressures. In the digital age, 'power to the people' appears to be more than just a slogan.

But while some see the Internet as an illustration of the potential power of the cyber citizen, others see the freedom of the Internet as a potential danger. Without rules and regulations, the Internet has the capacity to harbour paedophiles, pornographers and neo-Nazis as well as environmentalists and civil rights activists. If there are no filters on information and services, cyber-anarchy becomes no more welcome than tyranny. For these people, ICTs offer the chance to renew the democratic process itself, presenting new channels and outlets for delivering truly plural, transparent, participatory democracy. Faster and deeper access to information, improved communication, new

possibilities to organise, direct consultation between policy makers and citizens and tailored public services based around the needs of the public all proffer the chance to engage a digital civic spirit.

It is these people who have carried out the most far-reaching experiments with electronic democracy: tele-votes, electronic town halls, digital cities, on-line debates, electronic referenda and so on. So far though, experiments have largely failed to deliver a brave new world of electronic democracy; a neo-Athenian for the digital age. Attempts to create a new polis have instead tended to increase the capacity of the 'already wired' to access information and participate in political processes rather than help the excluded gain access, introduce new voices or improve the quality of political debate.

But electronic democracy stands for many things: governments providing top-down information to citizens; building in access points for two way interaction between governments and citizens; active citizens influencing and negotiating policy from the bottom-up. In practice this can mean: paying taxes, charges and benefits electronically; sending an e-mail to a public official; virtually attending council meetings; accessing electronic health files; participating directly in the political process through electronic town halls, digital cities, electronic polls, citizens juries and referenda. All of these examples empower individuals. By deepening political debate, widening the possibilities for people to participate in the political process, heightening people's awareness and skills to do so and increasing access points between government and citizens, ICTs enhance democracy.

ICTs offer the chance for a new type of relationship between policy makers and citizens: interactive, responsive, personalised. They present neither the extreme of cyber-anarchy nor the possibilities for a neo-Athenian cyberpolis – it is not possible for people to know everything about every issue. Instead, ICTs are an opportunity to renew participation: helping people to access the tools they need to develop and articulate informed political opinions; building partnerships across previously restricted boundaries; creating new spheres of influence outside central government; developing an active political culture beyond the town hall, committee and political party. Electronic

participation, in all its guises, may become a key part in many people's lives, in turn helping to deliver smarter, more effective, creative, enterprising, trustworthy government. The radical reform of government must include improving scope for political participation in the digital age.

Digital cities

Digital cities are one of the major innovations of electronic democracy. Over 1,000 towns and cities in the US have a homepage on the World Wide Web. More than 200 of these have civic networking projects, using ICTs to provide new channels for political information and participation. In Europe, there are now 70 telecities, which are supported by the EU as a way to reduce the 'democratic deficit', with 100,000 or more inhabitants and many more visitors. Cities vary in complexity and size, ranging from the digital island of Urk with one high street and no inhabitants to Amsterdam, where 45,000 inhabitants are connected through 250,000 modems and 50 public terminals.[77]

Amsterdam's digital city allows users to gather information, participate in over 100 discussion groups, meet in any one of 31 themed squares and send officials e-mail. It was set up in 1994 by public officials concerned about falling turnout at municipal elections. But although some serious political discussions have taken place, particularly over EMU, the most popular debates focus on life-style, leisure and sport. Inhabitants are mostly white, male, young and professional. Although the city has vastly improved the capacity of individuals to access government information and services, the overall quality of political debate has improved little.[78]

Other digital cities have also had mixed results. The first, Santa Monica's Public Electronic Network (PEN) set up in 1989, has not succeeded in bringing many new participants into its political discussion forums, despite a high profile, consistent press coverage and a large number of public terminals. However, PEN has helped to produce a quantum leap in the quality of Santa Monican services, improving public awareness of a number of local issues, particularly homelessness.[79]

In Berlin, some of the most active users of the digital city have been far right groups who have used the resource to openly advertise, communicate and mobilise.[80] Bologna, despite being the most democratically developed of the digital cities with universal access to a large network of pooled information, a number of newsgroups, e-mail facilities and open referenda, only has 5,000 subscribers, 86 per cent of whom are young, male professionals. Discussion groups mainly concentrate on sport and show business. The digital city is used more as a yellow pages directory than as a polis of direct democracy.[81]

Manchester's Information City provides bulletin boards with information about services, public discussion forums and private boards run by individuals and organisations, including the Labour Party. The city has established an advice network which connects welfare officers, financial advisers, housing aid advisers and voluntary agencies for people to receive immediate on-line help. Manchester has also set up an electronic town hall with e-mail facilities, on-line information, training and trading. Although the initiative has been careful to actively set up links with the 'information poor', installing computers at the Big Issue North West office and the Community Resource Centre in Moss Side, the facilities are still not widely used. The initiative has not made a significant impact on either local democracy or decision making.[82]

However, there are a number of examples of ICTs succeeding in improving the quality of political information and discussion. The California on-line voter guide set up during the 1994 elections informed citizens about past elections, candidates and their stance on particular issues. The site had 14,000 hits during the elections.[83] In 1994, 1996 and 1998, Minnesota e-democracy held successful on-line debates between Senatorial and Congressional candidates.[84] UK Citizens On-Line Democracy organised on-line discussion forums during the run up to the 1997 British election, including contributions from all three political party leaders. The organisation also provides the official web site for the Freedom of Information Act, including a chance to submit responses on-line and e-mail David Clark, the minister responsible for the white paper.[85]

In the Netherlands, a system is being set up which advises individuals on how to vote by matching their opinions with the most appropriate candidate.[86] Another experiment allows people to franchise their vote to a group, company or politician nominated to represent their views.[87] These experiments go beyond the simplistic dichotomy between representative *or* direct democracy. Instead, they offer the chance to update our notions of participation, making political processes and decision making more open, relevant and responsive to the needs of empowered citizens in the digital age.

Digital communities

Steven Clift, the Director of Minnesota e-democracy, argues against the conventional wisdom that ICTs mean 'the death of distance'.[88] For Clift, reserving channels and space for local programming when television goes digital can help to reconnect and re-engage people with their community. Educational programmes, local government meetings, public safety and health announcements, emergency information, public text bulletin boards and electronic town halls can all enhance community spirit and make political leaders more accountable. All can be delivered through ICTs either via local, digital cable television channels, public kiosks or the World Wide Web.[89]

Clift's vision has some resonance. The most successful practical uses of electronic democracy have been at the local level. Neighbourhoods On-Line in Philadelphia provides information and links to the media, schools, universities and government agencies. It also promotes on-line community activism, assisting local people in projects ranging from recycling to adult education.[90] In Kansas City, a colour-coded graphic map illustrates incidences of crime, demographic breakdowns, the location of dangerous buildings, property rates and so on to enable both policy makers and neighbourhood groups to implement strategies and direct resources accordingly.[91] UK Communities On-line has 32 partner programmes under its auspices, including Trimdon Digital Village in the Prime Minister's constituency. The organisation has DTI funding for three years to promote community networking throughout the UK.[92]

Key challenges

The chair of UK Citizens On-line Democracy, Richard Stubbs, argues that ICTs can influence local democracy on five levels. The first is *information-based* in which reports, minutes, press releases, budgetary information and so on are available through a telephone call or web site. The second level adds a degree of *response*, with employees required to reply to enquiries and tailor services to meet people's needs. Thirdly, *informal consultation* processes, like newsgroups and electronic town halls, share and pool ideas at the grassroots. Fourthly, a *formal consultation* stage provides citizens with an on-line space to actively share and discuss their views with policy makers, as Brent Council have already provided to debate local rates. Finally, relevant agencies – the local authority, voluntary sector, private sector, universities and so on – form a *democratic community*, an on-line digital city fusing physical and virtual space. Individuals are encouraged to take an active role in what Stubbs calls, 'a new kind of consensus democracy'.[93]

If followed widely, this vision has the potential radically to renew democracy, building foundations on-line, from the bottom-up. But the vision only passes one of the three tests – power – in full. It only partially passes the reality test and largely fails the people test: it is unlikely that any great numbers of people will either want or use these sorts of processes for some time to come. But this does not mean that ICTs have no role to play either in encouraging more participation in the political process or in reforming government. Electronic forms of participation are complementary to attempts aimed at improving the quality and depth of political debate: citizens juries can run alongside electronic town halls; electronic voting can go hand in hand with a wider range of options to cast ballots. In the short term, ICTs are likely to make their greatest impact at the local level where access can be ensured and needs more clearly assessed, monitored, targeted and met. But in the long term, as long as ICTs make a tangible difference to people's lives, the types of experiments described by Richard Stubbs will have a far greater chance of success.

Who gains wins

Proponents of electronic democracy face a key question: who has most to gain from the introduction of ICTs on a mass scale? In practice, ICTs help those who already hold intense preferences – neo-Nazis as well as environmentalists – to mobilise and articulate their opinions, making the voices of the politically active even stronger. ICTs, it seems, are often just another way of providing space for political lobbying and privileging the already wired and informed.

To date, there is little evidence of ICTs providing a platform or political voice for the most powerless in society. Where access is confined to the Internet, users tend to be those who are already politically and technologically aware. This flies in the face of the conventional wisdom which sees the Internet as an organ of liberation and equality. In fact, ICTs often exacerbate differences and tensions between: information haves and have-nots, the technologically aware and illiterate, politically aware and uninterested, people with and without access to ICTs. Alongside their potential benefits, ICTs also carry the potential to create a new information underclass.

Quality and quantity

There are a number of options available to policy makers serious about increasing electronic participation. As discussed in the chapter on services, the first is to ensure the widest possible public access to ICTs, for example through set-top boxes and public kiosks. But set-top boxes and touch screen kiosks add little to discursive democracy. Systems allow yes/no answers or a ranking of preferences, providing insight into the views of the public but adding little to the quality of political discussion. Policy makers will be able to take straw polls of public opinion but there will be little opportunity for people to voice their needs and aspirations in depth. ICTs may just add to the development of policies by focus group, only in the future policy makers will use electronic tools to test the public mood.

However, there is scope for ICTs to make improvements to participation and policy making. Seven out of ten responses to the Freedom

of Information white paper came via the Internet.[94] All the submissions were published on-line, allowing people to engage not only with the white paper but also with each other. The organisation hopes to publish real-time broadcasts from select committees via the Internet during 1998.[95] Nexus, a virtual think-tank, is hoping to influence the government's work on social exclusion by running on-line debates during 1998 involving a number of leading thinkers, academics and policy makers.[96] The Guardian ran post-Budget question and answer sessions on the Internet involving both the Chancellor, Gordon Brown and the Financial Secretary to the Treasury, Dawn Primarolo.[97] But while these processes improve the opportunity for the wired up to take part in policy formulation, they do little to represent the views of the majority. They succeed in adding quality and some degree of breadth and depth to political debates but they add little in the way of quantity.

More important steps will be providing cheap access and subsidised training for the information poor, alongside continuing research into technological advances like voice recognition which do not require people to use PCs or keyboards. If they prove useful, public discussions and services available from electronic town halls and digital cities could reach, represent and involve wide audiences. The goal for policy makers is to widen access while providing useful electronic services.

Participation in the digital age

There are several levels to electronic democracy. At its broadest, electronic democracy empowers individuals vis à vis the state, allowing people the chance to access the government on-line, vote electronically, e-mail an MP and so on. A second stage updates concepts of participation through new media of expression: electronic town halls, digital cities, community networks and the like. The final stage follows that envisaged by Richard Stubbs, a kind of digital democracy in which everyone has a stake in decision making.

The first level has substantial benefits for people, passing the reality, people and power tests. The second is more experimental, only partially

passing the three tests. The final stage is unlikely to come about for some time, at least until substantial inroads are made into improving levels of public and political trust in ICTs and people's capacities to use them, and until new technologies can be shown to make a tangible improvement in people's lives. As yet, this stage fails all three tests.

Electronic forms of participation are complementary to general attempts to modernise political processes and decision making. It is up to policy makers to set an example, using ICTs to help them reflect the views of their constituents and improve the quality of political debate. Government must engage with the issues which really animate people, taking heed of what the public wants without following every fluctuation in opinion polls and hence abdicating the roles and responsibilities of political leadership.

Creating electronic government

This pamphlet has explored the relationship between ICTs and government in three central areas: services, governance and participation; around several core themes: creative, smart, enterprising, holistic and trustworthy government; and through the lens of three checks on new technologies: reality, people and power. This chapter draws these threads together. The first section describes ways government can respond to the challenges new technologies bring to issues of regulation, jurisdiction and monetary policy. The second sets out a series of recommendations which can begin to create electronic government fit for the digital age.

Reality bytes

As outlined in the first chapter, government faces several challenges in the digital age: controlling the purse strings; regulation and jurisdiction; and monetary policy. My argument does not lead to either of two conventional extremes: that government is going to wither away in the face of these challenges or that ICTs do little except make government work more efficiently. The new landscape, partly shaped by ICTs, means creating a new type of government: working with new technologies rather than against them, being radical rather than cautious, using technology creatively rather than see it as a stranger or enemy of policy making. This section looks at ways policy makers can exert a

reality check on some of the encroachments on government made by ICTs and outlines ways they can begin to byte back.

Controlling the purse strings

There is some truth to the claim that government faces strong fiscal challenges in the digital age. As the speed of transactions rises and their sources become harder to trace, government will find it harder to tax electronic trade. The rise of digital cash widens the scope for fraud and crime. In general terms, global firms and markets, necessary investments in education, skills and training, one-off payments like the Millennium bug, the cost of updating systems, static or declining tax bases – all question the financial clout of government.

But if policy makers are creative, they have several options available. There is scope to tax more 'bads' alongside charges already in place on alcohol, tobacco and fuel consumption. New sources of environmental tax on pollution, road or land use could work alongside greater hypothecation to raise tax revenues. There are no compelling reasons why corporate taxation should be run as a 'one size fits all' model, recognising a simple split between large firms and small to medium ones. It may be worth experimenting with different tax rates according to the levels of public spirit shown by companies, as already measured by a wide variety of social and environmental criteria and award schemes. For example, those companies which invest heavily in upgrading the skills of their workforce could be subject to lower levels of tax.[98]

It is still too early to know the full part ICTs will play in this story. Some commentators suggest taxing the electronic 'bits' that flow in to and out of computers. However, any tax on information is unlikely to work: it discriminates against users of technology regardless of purpose and it is difficult to see how compliance could operate. President Clinton recently said that he had no plans to introduce a sales tax on goods bought over the Internet, except when the vendor occupied a physical site in the same state as the customer, arguing that while electronic commerce is growing, it needs supporting rather than

constraining.[99] The Internet is unlikely to emerge as the network of choice for most consumers even in the medium term. People are likely to value face to face transactions over anonymous forms of commerce for some time to come.

All the evidence from burgeoning centres of the digital economy like Silicon Valley are that growth in ICTs runs alongside rather than counter to physical economies and infrastructures. In fact, the take-off of digital economies is often dependent on physical infrastructures. For example, companies engaged in personal services, the fastest growing sector in Britain, require physical premises and deliver services to the consumer which are taxable. Multinational companies need a physical base where they must pay tax. Decisions on where to set up new companies have as much to do with the skills of a workforce and the general operating environment of a country as with concerns over tax rates. Any emerging digital economy will be embedded in a physical economy, not in a virtual realm outside the reach of government. This places a higher premium on regional policy. There is scope for Regional Development Agencies to use Challenge Funds to attract digital businesses to their areas and train unemployed people in the skills to use ICTs so that they can take up many of the data processing jobs that are currently outsourced, often overseas.

Regulation and jurisdiction

State control over information flows has disappeared with the advent of new forms of media. As heated debates over electronic copyright, clipper chips and encryption demonstrate, these media are notoriously difficult to regulate: the range of information sources is too wide, the lines between them are too fuzzy, the pace of innovation is too quick.

The most important step government can take to safeguard its own interests and those of its citizens is to invest in the *soft infrastructure* which will enable people to make choices for themselves, learning to pick and choose rather than relying on rules and regulations to make choices for them. State investment in education and training is the key tool for building the competencies people need to use technology

successfully. ICTs provide people with information but the knowledge to use them remains a human art. This will be a key element in any strategy for lifelong learning and maximising 'employability' across social groups. In practice, the government could introduce tax incentives for individualised learning accounts and invest more heavily in lifelong learning. The role of the state is to facilitate smarter use of ICTs, ensuring quality but not seeking to control all aspects of output and infrastructure.

Some issues, for example electronic commerce and crime, are better suited to international policy frameworks. Europe is taking the lead in transnational cooperation: information on a range of issues is regularly shared among Schengen countries; Europol is a forerunner to more extensive collaboration on transnational crime, the European Commission rather than individual member states took responsibility for replying to the US government's proposals on electronic trade. There is also scope for the World Trade Organisation to become more involved in issues of regulation and jurisdiction: setting out frameworks, monitoring events and enforcing international agreements.

ICTs, more than any other field of policy, demand flexibility rather than a unitary regulatory model. Policy makers are going to have to be creative and adaptable if they are to provide high quality policy frameworks in rapidly changing contexts. It may be that as they mature, ICTs regulate and govern themselves. For example, commercial sponsors see the Internet as a potential source of considerable investment and revenue. The price of their involvement will be degrees of control and regulation over content. Over time, new technologies are likely to develop their own principles and levers of jurisdiction. ICTs will use a tried and tested tool: self-regulation.

Monetary policy

Government is going to have to accept a more limited role over monetary policy in the digital age. The moves to make the Bank of England independent and preparations for European Monetary Union have reduced national government's control over interest rates and levels of

inflation. In the future, the rise of electronic cash and smart cards could further squeeze this role. The rise of private sources of money means that monetary policy changes its focus, becoming based more on protecting the consumer and ensuring against bias. To some extent, the role of government is to secure the widest possible availability and access to these new currencies so that benefits are felt by a majority of people, not just a privileged few.[100]

Given their public support and usefulness, smart cards are likely to become available widely before long for a range of functions. It will not be up to government to regulate their provision but it will be up to policy makers to ensure that their systems are adequately prepared, cards are available widely and people are able to use them. To avoid fears of 'big brother' or that smart cards are identity cards 'by the back door', cards must be voluntary. It should be up to consumers to choose how they want to use cards: as a passport, driving license, credit card, library card, NHS card and so on. People should have access to as many cards as they want. For example, someone using a smart card as a passport should not have to use the same one to check out a library book. This will keep the balance firmly in the favour of citizens – first and foremost, smart cards should be citizens' cards.[101]

Going digital

In this section, I suggest how government can go digital, beginning to perform the roles which will make it more effective, responsive and legitimate in the digital age. The key to each set of recommendations is the three checks: reality, people and power. There is no point digitising poor services; bad governance can still make good use of ICTs; new technologies are not a panacea for poor quality political debate. The crucial point is recognising the complementary part ICTs play within wider processes of change. The role of the state is to build the social capital and intellectual infrastructures which will support the development and use of ICTs. This is partly achievable through tax breaks, partly through investments in tertiary education and centres of innovation and partly through setting good examples.

Services: reality, people, power

Implementing a strong vision of electronic services goes hand in hand with the radical reform of government. The goal should be one-stop, non-stop public services with searches available by life event, need, risk and opportunity. There is little concern among the public how this is done: 38 per cent say they would like access to services through a TV set, 37 per cent through a telephone and 36 per cent through a computer.[102] The more important point is the holistic integration of services across the various forms of media. The moves towards convergence of broadcast technology, computing and telecommunications on digital formats – telematics – should be the basis of electronic public services.

- *E-mail.* Over the next five years, the government should offer producers of set-top boxes and mobile phones a 2.5 per cent discount on VAT if they offer e-mail as part of their sales package. The result should be wide take-up of e-mail, providing spin-off benefits to economic activity that will offset losses to the Treasury.
- *Flagship policies.* The key is not to focus on streamlining what government does but to enrich the content of services, adding value through ICTs. Flagship policies could include: a smart card run by the government in partnership with Thomas Cook and American Express which bundles together passport service with foreign exchange information and travellers cheques; a services offering free tax advice and calculations on-line; for businesses, a single point of access for advice about copyright, patents and grants.
- *Legislation.* The government should look carefully at legislation involving privacy, data protection and electronic signatures.[103] PFI should be reformed to enable more flexibility, smaller and cross-departmental tenders. Government should look carefully at the regulation of databases and the use, under controlled conditions, of data-matching and data-mining.

Governance: reality, people, power

Ensuring good electronic governance is as much about cultural as technological change: from secrecy to openness; from competition to collaboration; from hierarchies to flatness. Government spending on ICTs approaches £10 billion each year, equivalent to nearly £200 for every man, woman and child.[104] Of this, approximately £2.5 billion is spent by central government and over £1 billion by local government. Yet government continues to lag some way behind the private sector in using ICTs.[105] While IBM has a workstation for every employee and the insurance industry an average of one for every three, the ratios are 1:10 for central government, 1:12 for local government and 1:14 for the NHS.[106] Government should aim to match these levels while concentrating on software rather than just hardware; changing cultures alongside adopting new technologies; using ICTs in policy formulation and decision making as well as to improve systems of information and communication.

- *Holistic government.*[107] ICTs can play a significant part in 'joining up' government agencies and departments. As a contribution to acting on aspirations to partnership with other sectors, government should develop secure extranets with key service providers to work alongside its Government Secure Intranet(GSI).
- *Modernisation.* Policy makers should aim to reform a range of processes within the corridors of power: remote electronic voting for MPs from touch screen kiosks situated around the House of Commons; up-to-the-minute accounts of departmental spending for ministers; set a target that, within five years, one third of local council committees are capable of 'virtual management' with routine decisions confirmed by electronic signatures.[108]
- *RepNet.* The EU, central government and local government should share the costs for setting up a RepNet connecting the various tiers of governance: local, national (including the proposed chambers in Scotland and Wales) and European so

that politicians can exchange information and discuss points of common interest. Common data standards and rules of exchange should be regulated by a joint panel drawn from the contributing bodies.

Participation: reality, people, power

Using ICTs will not magically increase either the quantity or quality of political participation. The important point is how ICTs can complement efforts to modernise outdated procedures throughout the system of governance and representation. They will only have far-reaching impact if the quality of political debate as a whole improves and if mainstream politics opens to include those issues which really animate people. The focus of reforms should be empowering people, providing them with the opportunities, tool kit and social infrastructure to engage with political debates. ICTs can help with this process but they are just one aspect of a number of changes aimed at improving the quantity and quality of political debate.

- *Return of the local.* The role of the local in the use of ICTs is often underestimated. Sixty per cent of phone calls and e-mails move within single building; 80 per cent of transactions on the Internet are made within a twenty mile radius.[109] The most successful attempts at improving participation through ICTs to date have also been local. Government should set up a competitive, 'Electronic Participation Fund' with money provided from the Lottery for the best initiatives in on-line citizens juries, digital cities and community networks.
- *Electronic voting.* More than two thirds of the public say they would be happy to vote electronically.[110] Government should set a target that, starting from local elections in 2000, people should be able to vote from public kiosks situated in supermarkets and pubs as well as in libraries and schools. By the next general election, people with digital television, a PC

or mobile phone should be able to use these media to vote securely.

- *Wiring up politicians.* It currently takes an average of thirteen steps from the on-line Parliamentary web site to find the e-mail address for an MP – if they have one at all.[111] There are a number of ways politicians could improve their accessibility to the public: by the end of this Parliament MPs should have a web page and e-mail address reached in one step from the open.gov.uk site; Ministers should agree to participate in an on-line forum as part of the publication process for every white paper; backbenchers should be urged by party leaders to run major on-line consultation projects in their constituencies.

Government in the digital age

There are a number of processes driving change in the modern world: changing values, economic shifts and technological innovation. Yet government and governance seem to be increasingly left behind, stuck with outdated rituals and practices in a world which has moved light years ahead. In this pamphlet, I have tried to demonstrate how and why this does not need to be the case. The argument is simple: ICTs offer the best chance yet to make government responsive, effective and legitimate. For policy makers, the key challenges lie ahead.

ICTs are transforming our capacities for gathering information and generating knowledge. But we are only just beginning to see their potential to change fundamentally what we do and how we do it: at home, work and leisure. The future is murky: there are both opportunities and challenges ahead. How policy makers implement and use new technologies now will have great effect on the overall development of government and society. Their role is to steer a path through the often complex and jumbled worlds of information overload and technological hype, anticipating the possibilities and responsibilities of the first digital century. Rather than reacting to change, policy makers have the opportunity to shape the development of electronic

government. Government, as a major purchaser, regulator and service provider of ICTs, has the capacity to use technologies to benefit citizens, improve decision making and provide higher quality public services.

Better government will not be an automatic result of more electronic government. But ICTs, if properly utilised, can be a powerful ally in the search for more trustworthy, responsive and creative forms of government. They are an integral tool of strategies to revitalise governance and renew democratic culture in the digital age.

Notes

1 Rose C, 1996, 'How do businesses need to shape up given single issues by pressure groups?'. Paper given at The Corporate Brand Conference, *Whose responsibility is it anyway?* 15 February 1996.

2 For the former view, see Dyson E, 1997, *Release 2.0: A design for living in the digital age,* Viking, London; Negroponte N, 1995, *Being digital,* Media Lab, Massachusetts Institute of Technology; and Toffler A, 1990, *The power shift,* Bantam, New York. On the latter, see Bellamy C and Taylor J, 1998, *Governing in the information age,* Open University Press, Buckingham.

3 This is contested ground. It is clear that the information revolution and knowledge economy effect people and groups in very different ways. See Castells M, 1997, *The rise of the network society vol 1,* Blackwell, Oxford; Coyle D, 1997, *The weightless world: strategies for managing the digital economy,* Capstone, Oxford and Kruger D, 1998, *Access denied? Preventing information exclusion,* Demos, London.

4 See Inglehart R, 1990, *Culture change in advanced industrialised countries,* Princeton University Press, Princeton.

5 On this see Cairncross F, 1998, *The death of distance,* Orion Business Books, London.

6 Castells M, 1997, *The power of identity,* Blackwell, Oxford.

7 The Henley Centre, 1997, *Planning for social change 1996-97,* The Henley Centre, London.

8 Castells M, 1997, *The power of identity,* Blackwell, Oxford.

9 Birch D, 1996, 'Downloadsamoney' in *The new enterprise culture*, *Demos Quarterly*, issue 4.

10 See note 9.

11 Motorola, 1997, *The British and technology,* Motorola, Slough.

12 Parliamentary Office for Science and Technology (POST), 1998, *Electronic government,* POST, London.

13 www.ncp.gov.sg

14 Mulgan G with Jupp R, 1996, *The role of government in promoting the information society,* Demos, London.

15 See note 13.

16 See note 14.
17 See note 12.
18 *The New York Times,* 8 December 1997, 'On line help for housing applicants'.
19 www.strategis.ic.gc.ca
20 www.gol.com
21 Tsagarousianou R, 1998, *Cyberdemocracy,* Routledge, London.
22 www.open.gov.uk
23 www.info.au
24 Personal communication with Luis Vidigal, Deputy Director General, INFOCID.
25 See note 22.
26 The Cabinet Office, 1997, *Government.direct,* The Stationery Office, London.
27 www.coi.open.gov.uk
28 www.kable.co.uk
29 See note 28.
30 IBM press release, December 1997.
31 www.ncet.org.uk.
32 See note 21.
33 Personal communication at the Virtually Social seminar.
34 See note 31.
35 Department of Health, 1998, *Our healthier nation,* The Stationery Office, London.
36 NHS Executive, 1997, *Patients not paper,* NHS, Leeds.
37 Personal communication with member of NHS executive.
38 Personal communication with Dr Ray Jones, Senior Lecture in Health Informatics, University of Glasgow.
39 Personal communication with Mel Collins, BT Laboratories, Ipswich.
40 Kadri S, 1997, *Techno town: the Hackney Information Network (HINet),* Hackney Council, London.
41 Richard.Steel@newham. gov.uk.
42 www.romanse.soton.ac.uk.
43 See note 28.
44 Stoker G and 6 P, 1998, *Bringing it all together,* ALG, London.
45 See 6 P, 1997, *Holistic government,* Demos, London.
46 See note 22.
47 'Brave new world of the plastic card', *The Independent,* July 8 1997.
48 See note 7.
49 See note 3 (Kruger, 1998).
50 See note 28.
51 www.europarl.eu and www.gol.com
52 See note 14.
53 See note 12.
54 See note 12.
55 See note 21.
56 See note 33.
57 See note 23.
58 See note 23.
59 www.city.net
60 See note 26.
61 *'The Financial Times,* August 18 1997, 'Computers set to sharpen ministers' reactions'.
62 See note 61.
63 See note 28.
64 See note 22.
65 www.parliament.uk
66 See note 28.
67 The Future Foundation, 1997, *Inside information: Harnessing the value of Intranets to gain competitive advantage,* The Future Foundation, London.
68 See note 33.
69 See note 33.
70 See note 33.
71 See note 33.
72 www.Childcare-Links.org.uk
73 See note 14.
74 The Department of Environment, Transport and the Regions, 1998, *Power to the people,* The Stationery Office, London.

75 Rt. Hon Blair A, 1998, *Leading the way,* IPPR, London.
76 From the preface to Barrett N, 1997, *The state of the cybernation,* Kogan Page, London.
77 Francissen L and Brants K, 1998, 'Virtually going places: square-hopping in Amsterdam's digital city' in Tsagarousianou R, 1998, *Cyberdemocracy,* Routledge, London.
78 See note 77.
79 Docter S and Dutton WH, 1998, 'The first amendment on-line' in Tsagarousianou R, 1998, *Cyberdemocracy,* Routledge, London.
80 Schmidtke O, 1998, 'Berlin in the net: prospects for cyberdemocracy from above and from below' in Tsagarousianou R, 1998, *Cyberdemocracy,* Routledge, London.
81 Tambini D, 1998, 'Civic networking and universal rights to connectivity: Bologna' in Tsagarousianou R, 1998, *Cyberdemocracy,* Routledge, London.
82 Bryan C, 1998, 'Manchester: democratic implications of an economic initiative?' in Tsagarousianou R, 1998, *Cyberdemocracy,* Routledge, London.
83 Macpherson M, 1997, *Citizen participation in politics and the new systems of communication,* Bloomsbury, London.
84 www.e-democracy.org
85 www.communities.org.uk
86 Macpherson M, 1997, *Citizen participation in politics and the new systems of communication,* Bloomsbury, London.
87 Personal communication at the Virtually Social seminar.
88 See note 5.
89 www.freenet.msp.mn.us/people/clift
90 Schwartz E, 1998, 'An Internet resource for neighbourhoods' in Tsagarousianou R, 1998, *Cyberdemocracy,* Routledge, London.
91 www.challenge.stockholm.se
92 See note 85.
93 See note 33.
94 www.foi.democracy.org.uk
95 See note 85.
96 www.netnexus.org
97 www.guardian.co.uk/budget98
98 Mulgan G, 6 P and all, 1997, *The British spring: a manifesto for the election after next,* Demos, London.
99 *The Times,* 4 March 1998, 'Interface'.
100 See note 3 (Kruger, 1998).
101 For more on this see Kable, 1997, *Citizen.direct,* Kable, London.
102 See note 11.
103 See 6 P, forthcoming, *The future of privacy,* 2 vols., Demos, London.
104 See note 22.
105 See note 28.
106 See note 2 (Bellamy and Taylor, 1998).
107 See 6 P, 1997, *Holistic government,* Demos, London, and note 44.
108 For more on this see Freeman R, 1997, *Democracy in the digital age,* Demos, London.
109 Graham S and Marvin S, 1998, *The richness of cities,* Comedia/Demos, London.
110 See note 11.
111 Personal communication at the Virtually social seminar.