Access Denied?

Preventing information exclusion

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Introduction

It has been an orthodoxy of the 1990s that the revolution in information and communication technologies presents an unprecedented opportunity for social cohesion, upward mobility and the realisation of individuals' life chances. The Information Society Forum's first annual report to the European Commission stated that 'information technology can empower ordinary people and their communities, putting them more in control of their working lives, allowing them a fuller exercise of their rights and an outlet for their creativity'.[1] The rhetoric of the information age is unashamedly optimistic. This optimism is facilitated by various factors, not least the near-miraculous development in technology which has taken place during the past generation.

Yet, as with previous technological, industrial and scientific transformations of social and economic structures, it is by no means certain that the impact of the Information and Communication Technology (ICT) revolution will be entirely benign. A key concern is that, unless it is carefully steered by policy makers in all sectors, ICT development could contribute to the reinforcement of the existing inequalities and blockages to human potential that we now term 'social exclusion'. Lack of access to the opportunities opened up by ICT could amount to a new dimension to social exclusion – the have-nots of the information age could be afflicted not only by low income, lack of work and poor life chances but also by 'information exclusion'. In this Demos Argument we aim to identify, to examine and finally to propose some solutions to the emerging problems of information exclusion. The argument in brief is as follows:

- The development of ICT, left solely to market forces, could reinforce existing patterns of social exclusion and create a new form of disadvantage – information exclusion – whereby people on low incomes and no access to the benefits of the ICT revolution will find themselves severely handicapped in the information-intensive jobs markets and social networks of the next century.

- ICT could, however, offer great scope for helping to overcome existing patterns of exclusion by equipping people with the skills and knowledge to make full use of ICT in work and social life, and by opening up new opportunities for those at risk of marginalisation – for example, disabled people and those living in remote areas of the country.
- There is much fatalism about a future of 'information-rich and poor' divisions in society in the next century. This fatalism should be rejected: there is nothing inevitable about the rise of information exclusion as a new variant of the existing ills of poverty and alienation. We have the opportunity to develop ICT policy in such a way as to prevent this form of exclusion emerging as a major problem and at the same time to use ICT to tackle the existing blight of social exclusion.
- Policies to prevent information exclusion and combat existing forms of disadvantage should include measures to improve access to ICT systems for all, to improve people's skills in making effective use of ICT, to make the content of the ICT 'superhighway' services more useful across all sections of society and to avoid discrimination against low-income households and areas in relation to ICT-based marketing and the development of electronic money services.

The key message is that information exclusion, far from being inevitable, ought to be seen as eminently preventable; and that in preventing it, we can do much to help overcome the ills of social exclusion which have rightly been put at the top of the Labour Government's policy agenda.

What is information exclusion?

The term 'exclusion' reflects the argument that there are certain groups and individuals within society who, for a number of reasons, have little or no access to the ladder of personal advancement. The term is used to describe a state not simply of material poverty but also of lack of access to the opportunities of upward mobility. It involves unemployment and a lack of key skills and contacts with a wide range of social networks; it also covers the results of this condition: disempowerment and a feeling of alienation. A recent Demos paper on young people in Britain concluded: 'Millions are failing to achieve basic standards. They are fatalistic about the future and consequently unwilling to try and shape it for themselves. They feel cut off from society – not just from jobs, but also from politics, civic organisations and even leisure.'[2] Exclusion embraces multiple forms of disadvantage which make many people unable to engage in 'normal' life as most people know it: constraints on travel, leisure, further education of any kind – indeed, on any outlay beyond that which is necessary for survival. Exclusion is a process that prevents people from developing the means to thrive.

The idea of 'information exclusion' relates to this. If we acknowledge that there is more to getting a job and to generally 'having a life' than intelligence and personality, it follows that the means of obtaining information and of communicating with other people is a vitally important factor in our lives. Thus there is significant concern among thinkers on social policy that the revolution in ICT is in danger of creating an underclass of individuals who do not have access to the hardware, or the skills, required for participation in the information age. There is also concern – among academics more than among politicians, the media or the public as yet – that ICT is in danger of excluding people in more indirect ways than their own lack of access to ICT resources, through the wealth of public and private information which is available to companies.

Forces that might exacerbate exclusion

There are a number of aspects of ICT which threaten to exacerbate the exclusion of many people and to drive others into an excluded position. These can be summarised as follows:

Access The cost of ICT hardware is the single most important factor preventing people from engaging in the information society. Although the features 'bundled' in a basic personal computer package have become steadily more sophisticated, versatile and powerful, the cost of a home computer with a printer and Internet access is steady at approximately £1000, with significant running costs, especially for online services. It is hard to argue that lack of a personal computer or Internet account is a key factor in exclusion at present: many people in work feel no need at all for a home ICT system and

do not feel excluded as a result. But this is likely to change as electronic communication becomes more important in business, as more people find themselves working part of the time from home by choice or force of circumstances and as self-employment rises. As these changes take place, so those on low incomes, in insecure work or unemployed will find that lack of access to ICT adds to the problems they face in gaining jobs, skills, information and contacts. It should also not be forgotten that access requires money: the running costs of ICT equipment are significant for those on low incomes. Finally, we need to bear in mind that access to more basic ICT systems is still not universal: there are low-income deprived estates in the UK with low household penetration of telephones and running costs of mobile and fixed phones are also significant for many poor households.

Skills Even when access to the technology is achieved, there remains the problem that using it requires either training or practice. Unlike watching television, ICT use can be daunting – especially, research shows, to those aged 44 and above. Using PCs and the Internet is still difficult and uninviting for many, and software and hardware faults are frequent, frustrating and obscure. Computer manuals are a byword for lack of clarity. Effective ICT use still demands a relatively sophisticated knowledge of how the technologies actually work, which is not true at all for the core information systems of society – telephone, television, print media and radio.

Content The Internet is at present mainly a tool for affluent technophiles and business users, as far as its content goes. Foreign stock market figures are easier to come by than information on local jobs and there are too few effective schemes for finding work online, distance learning and the building of 'virtual networks' of useful social contacts.

Consumer choice The proliferation of publicly-available information has resulted in the phenomenon known as geodemographic profiling, by which companies are able to identify the individuals who they believe might like to buy their products. Only offering their products to these people means that others are excluded from various parts of the marketplace, which raises significant concerns about social cohesion.

The cashless society One almost inevitable result of ICT is the advent of the cashless society. Those who are prevented from using electronic payment systems, either because of problems with access or skills (unlikely) or because they are denied that particular consumer choice by the banks (more likely: the present system of blacklisting is one result of ICT), will find themselves in a vicious circle of exclusion.

Forces that might alleviate exclusion

Certain solutions present themselves to these threats. As we shall see, there are limitations to the possibilities of ICT becoming a factor in the reinforcement of patterns of social exclusion. Certain aspects of ICT development offer substantial grounds for optimism in the field of personal improvement and social progress. It could even be argued that information exclusion is a relatively short-term problem that will be dealt with in the course of the rapid evolution of ICT systems and the spread of the Internet. Proactive governmental intervention could be used to solve many of the problems outlined above, principally those relating to access and skills.

Since it is neither desirable nor possible fully to regulate or control the flow of either information or money, the problems relating to both content and consumer choice require more organic solutions. How to deal with the problems that attend the cashless society – already apparent – is a difficult point. It will require a mixture of government–corporate initiatives and organic processes. Beyond the problems of information exclusion itself, ICT offers great 'inclusive' potential in the fields of education and employment.

How ICT might exacerbate exclusion

ICT has been widely trumpeted as a key part of the solution to many social ills. The opportunities it seems to offer have been proclaimed by politicians and the media, and most of all by the ICT industry itself. According to Michael Alderson, Chairman of the communications group Motorola: 'The information society promises us economic prosperity, greater personal opportunity and a more flexible lifestyle. It also makes the world more competitive, recognises no national frontiers and increases the pace of change in everything we do.'[3]

While the jubilant tone of this kind of prediction is in many ways justified, the very truth of Mr. Alderson's comments contain hints of the dangers of ICT as a development that could exacerbate present patterns of deep-seated social disadvantage. 'Greater personal opportunity', 'flexibility', 'increased competitiveness', 'increased pace of change' are all the classic advantages of the liberalised marketplace: but they are mixed blessings. As we shall see, for every advantage ICT offers there are social costs.

Access to hardware

Most writing on the subject of information exclusion relates to the problem of ICT provision. The terms 'information poverty' and 'information have-nots' have been coined to describe the state of lack of access. Existing evidence on access to ICT shows fairly predictable patterns, which can be summarised as follows:

HAVES	*HAVE-NOTS*
Young	Old
Men	Women
Affluent	Poor
Technology enthusiasts	Technophobes
Professional	Unskilled
Suburban	Inner-city/rural
Home-owners	Rented/temporary accommodation

The following tables set out in more detail the patterns of confidence with and ownership of ICT in the UK.[4]

Table 1. PC ownership by sex, age and socioeconomic class

	M	**F**	**16-44**	**54+**	**ABC1**	**C2DE**
IT knowledgeable	50	31	54	25	50	31
Regularly use PC	44	29	51	21	52	23
Have used Internet	23	12	25	8	25	9
PC at home	40	32	46	24	49	24

The table shows significant disparities between ICT use and confidence in men and women, the young and the old, and the affluent and those with a low income.

Gender The importance and frequency of computer use at work is hardly affected by gender. However, about 10 per cent more men than women own computers (have a PC at home), find them important in their day-to-day lives and are confident in their use. The 10 per cent difference in computer ownership is accounted for almost entirely by men who use computers to play games and men who use computers for school or college work. A comparable number of men and women own computers which are used for other reasons. Table 2 sets out the predictions for PC ownership in the year 2000.

Table 2. Gender patterns for PC ownership

	Total population	M	F	Individuals with children
Now	36	40	32	49
By 2000	55	62	48	n/a

Age. Over-45s are less likely to use or own computers. There is little difference in frequency and importance of computer use at work, between age groups under 45. It would be wrong, however, to overemphasise the technophobia of the elderly. It generally takes longer for elderly people to become confident in the use of new technology, such as the telephone – but evidence from the University of Sussex suggests that the elderly have become as confident about using the telephone as any other group. It is also clear that if people can see a clear reason to use technology they will do so. The Anchor Housing Association has provided a number of elderly people with access to BT Telesurfer (a cross between the Internet and Teletext), which could be used to find bus timetables and similar information, and the residents all found it simple and useful. Table 3 sets out forecasts for PC ownership in the year 2000.

Table 3. Age patterns of PC ownership

	16-24	25-44	45-64	56+
Now	50	44	32	13
By 2000	78	79	41	12

Class The higher your social class, the more likely you are to use computers at home and at work, find computers important, be confident in their use, and use them for work rather than for playing games. There is little difference here between AB and C1. The distribution of other forms of ICT is less predictable, however: cable services are most accessible to people living in dense urban areas – the best and the worst-off – and less available in suburban and rural areas. Table 4 sets out forecasts for PC ownership by 2000.

Table 4. Class patterns for PC ownership

	AB	C1	C2	DE
Now	51	47	28	21
By 2000	70	65	50	40

Geography. Geography is a further aspect of information exclusion. Microsoft's slogan 'Where do you want to go today?'™ sells the Internet as existing above and beyond physical geography, in the boundless freedom of cyberspace. But patterns of access show a stark geography of inclusion and exclusion. The liberalised telecommunications marketplace is insensitive to the geography it produces. The industry is profit-driven and makes careful use of geodemographic targeting to install infrastructures only in those areas likely to be profitable. BT's universal service obligation leads to a relatively homogenous national telephone network but the deregulated market has resulted in an uneven spread of services and is in danger of creating vicious circles of exclusion leading to 'virtual ghettos'. For example, in the United States, a seriously uneven patchwork of supply has developed, notably in parts of New Jersey.[5]

A clear pattern is developing in the UK, where advanced ICT infrastructures are concentrated in cities and in the south. London is serviced by four or five separate telephone networks, all owned by different companies, as well as by global providers, while peripheral areas are provided for by BT only. There is evidence which shows that telephone penetration in the UK varies from 75 per cent in the north of England to 89 per cent in the south-east, with these regional variations masking much greater local differences. In Newcastle a study showed some wards with as much as 99 per cent penetration and others with as little as 60 per cent – on one estate 74 per cent of households lacked a telephone.[6]

Left to its own devices, the process of wiring the UK – and other countries – to the digital ICT grids of the next century will produce a bias towards urban centres, business users, affluent households and densely populated urban and suburban regions. It will produce a bias against sparsely populated rural areas, geographically peripheral areas and low-income areas within cities. In the long run, market forces and new technical developments could produce near universal access but the lead time for such an evolution will be very long and in the interim many patterns of social exclusion would be reinforced by new forms of information exclusion.

Skills

Access to hardware is rightly seen as the paramount problem of information exclusion. It could be, however, that it is simply the first problem: once surmounted, others will present themselves. Simply having access to the equipment is only the beginning of making use of ICT: people need the skills to navigate ICT services and to make effective use of the hardware and software, which remain counter-intuitive to a large extent. A survey of public attitudes towards ICT use found that of those who had heard of the Internet but had never used it, the most stated reason was 'no access to a computer' (42 per cent). Next was 'not interested' (25 per cent) and then 'do not know how to' (16 per cent). The second and third answers are closely related, as are some of the other stated reasons: 'no reason to use it', 'do not know benefits' and 'lack of time'.[7]

All these reported reasons stem from one underlying problem: the apparently impenetrable confusion of systems, applications, uses and, most of all, jargon, which surround and all but obscure the benefits of ICT. Indeed, it could be argued that confusion and lack of skills are more significant barriers to ICT enthusiasm than lack of access to the hardware: people might say they do not use the Internet because they do not have access but that is often because they have not found out about local Internet schemes in which they could take part or because they regard information technology as dauntingly difficult to learn about.

Content: ICT uses and virtual networks

As the Internet is increasingly driven by business demands, the 'useful' information available is almost exclusively useful to professionals. It is easier to access stock market information from around the world than to find out about job opportunities in your local area. A system initially designed by and for academics still retains many of the characteristics of a secluded and exclusive ivory tower for technophiles, despite or because of its appropriation by business. How to get ICT to appeal to, and help, those at the bottom of the income scale is a problem to which there are few easy answers. Moreover, even affordable Internet services targeted at those without jobs and suffering other forms of exclusion would be no panacea in their own right. But better access to information via ICT could be a valuable part of a solution to the deep-seated problems of exclusion.

To understand the uses ICT could potentially be put to, in terms of 'useful' information, the theme of 'network poverty' must be introduced. Throughout the Western world in the 1990s it has become gradually acknowledged that the problems of social exclusion – unemployment, retarded career development, feelings of alienation and disempowerment – are in some way related to the social networks in which an individual operates. For too long strategies for coping with exclusion have concentrated on the traditional remedies of welfare, incentives and skills, with little attention paid to the ways in which the majority of people find jobs, secure promotion and achieve inclusion. For nearly a quarter of a century it has been argued with increasing force that central to the process of finding a job are informal contacts – 'weak ties' with former colleagues, acquaintances and friends of friends – rather than the 'strong ties' with family, childhood friends and neighbours.[8] The theory of network poverty holds that the pub or club is likely to be a more useful place for many to find a decent job than the job centre, which simply lumps unemployed people together in a ghetto of exclusion. Network poverty is not simply the inability to meet those through whom one may be offered a job; it is also the lack of information about diverse fields of experience, which is often provided by weak ties and which makes one more attractive to a potential employer.[9]

Thus this sociological finding appears to bear out the force of the adage 'information is power' – at least, for those with the material and social resources to act on it. It is obvious, therefore, that in this context ICT offers significant benefits to those for whom profitable networks are not already established through background or the workplace – that it may enable people to break into useful networks, both through the 'information' and the 'communication' possibilities of the technology. On the other hand, it could just as easily be argued that the structural and technical nature of ICT will prevent the formation of the casual, informal contacts people need – assuming that knowledge about diverse experiences (which ICT can supply) is not enough, that social networks are still important. Will ICT help to involve people (by virtual socialising and communication) or isolate them further (by replacing or preventing real socialising)?

It is still too early to tell. There is evidence to suggest that virtual communication can provoke as powerful an emotional engagement as face-to-face communication. There are heart-warming stories of the parents of sick children finding support and counsel on the Internet, even when housebound in the middle of the night: the ties formed are deep and lasting. On the other hand, Howard Rheingold has observed that these relationships did not always translate well into the real world. People who get along well online sometimes discover incompatibilities when they meet that were hidden by the structured and disjointed communication via ICT.[10] How the psychology of ICT use can affect the less emotional but just as informal field of professional networking, awaits research. However, some experts consider that the net can be, and is, used more effectively for sustaining existing networks than for creating them. Such conclusions imply that while ICT is proving highly useful to professionals, it is as yet of little use to those trying to join their ranks.

Consumer choice

There is another, more invidious, way in which the ICT revolution threatens a deepening of social exclusion. The prospect of 'virtual ghettos' comprehends more than simply a section of society denied access to ICT by their own lack of wealth: it is also about a section of society denied access to wealth because of exclusion from and by ICT systems themselves.

A certain amount of this kind of information exclusion seems an almost inevitable corollary to the most obvious benefits of the information age. The revolution in modes of business which ICT has brought about has been facilitated by the deregulated western economy. Unfortunately, however, there is growing concern that the deregulated nature of the ICT industry is consolidating the situation of the socially excluded in ways more complex than the obvious harms apparent in the limited number of PC-owning or PC-using individuals. Arguably, the wealth of private or commercial information which is available to companies enables them directly to concentrate their marketing efforts on those people considered 'good prospects', in other words the better-off. Thus some low-income individuals and families are denied access not just to the hardware of ICT but also to the benefits that a positive rating in a commercial information system can endow – in particular, to attractive and affordable financial services.

At the root of this phenomenon is the growth of geodemographic profiling – whose development is promoted in part by the growing sophistication of ICT. This is the complicated process of assessing the wealth and style of a certain area in order to analyse, segment and target a population of consumers more efficiently. Direct marketers can buy from a large range of geodemographic information systems, such as ACORN, TRAC and MOSAIC. These systems provide detailed information on geographical areas and are now so highly developed that they can identify the salient economic and consumer features of a certain street – and sometimes of a group of only three or four houses. Jonathan Robbin, the creator of the geodemographic system Claritas and the acknowledged 'father' of geodemographics, has declared: 'Tell me someone's zip code... I can predict what they eat, drink, drive – even think.'[11] This kind of claim has worrying implications for a whole range of civil rights but we are concerned here with how this kind of knowledge could contribute to a process 'locking' people into a state of socioeconomic exclusion by helping deny them access to certain commercial services.

What began in the nineteenth century with colour-coded maps of London showing the estimated affluence of the inhabitants in different boroughs developed into the system known as 'red-lining' –

the deliberate avoidance of certain large areas by the sellers of insurance. The accuracy of modern geodemographic profiling compounds this trend, enabling financial service providers deliberately to bypass the worst-off in their pursuit of the customers in the ABC1 socioeconomic group. This is the danger which Michael Alderson of Motorola glosses over when he refers to the 'more competitive' world which ICT has helped to engender. 'More competitive' in the direct marketing context means increased pursuit of the ABC1s and the ability effectively to ignore the less lucrative C2DE market segments.

The attack on the use of geodemographics by direct marketers has come from various quarters. A particularly eloquent case is made by the American sociologist John Goss. His argument is that an individual's life is fundamentally conditioned by his or her consumer choices – that 'to stand outside the sphere of consumption and the circulation of commodified meaning is to stand nowhere at all in contemporary society.' Thus access to the widest range of choices amounts almost to a civil right. And in a culturally fragmented, high-capitalist economy, access to information on available products is almost as important as access to the products themselves; hence the central significance of marketing and geodemographic targeting. According to Goss: 'It is not merely the power to control consumer behaviour which is sold by the geodemographics industry but also the power to construct consumer identity.'

The fear is that having constructed consumer identity, the use of geodemographics will confirm people in that identity, inhibiting social mobility and confirming their excluded positions: Goss is worried that geodemographics 'displays a strategic intent to control social life and that the ideological conception of identity and social space within the model may become real – in other words, that the assumptions will be validated as the strategies take effect.' The targeting of individuals or families according to the segmentation systems of marketing software could potentially have the effect of *ex post facto* realisation: offered only products – and, more importantly, services – considered applicable to the C2, west-of-Scotland, O-level-only, rented-accommodation, thirty-something machine-worker 'target group' such an individual is more likely to remain in that group, and to focus his consumer power on purchasing products considered appropriate by the marketer. Thus the seller, not the consumer, is setting the agenda, controlling demand as well as supply: geodemographics 'is based upon an instrumental rationality that seeks to bring the processes of consumption further under the control of the regime of production.' Goss's conclusion is that 'we are no longer confronted with our own will.'[12]

This problem is linked to a phenomenon which has become more marked in recent decades: the polarisation of social space. People of varying incomes rarely live in the same areas any more, which further limits the possibility of creating useful networks for the excluded. Not only are young people on council estates deprived of useful contacts, they are deprived of role models, examples of successful people who they can look up to, while their affluent counterparts live in suburbs which are equally homogenous in terms of income. The result is less social cohesion and more class rivalry. 'Red-lining' has played a part in this polarisation, perhaps the most destructive development in social organisation in the post-war period, and there is a danger that more advanced customer research techniques will compound it.

The cashless society

If we accept that to ignore 'commodified meaning' – to stand outside the value-laden nature of the commercial system – is to 'stand nowhere at all in contemporary society', it follows that the availability of financial services confirms one's socioeconomic position even more than the availability of cars or clothes. It was in the selling of financial services that geodemographic targeting developed and there is no doubt that problems of information exclusion are thus closely related to financial exclusion.

One important aspect of this is the approach of the cashless society, made possible by the ICT revolution. With this in mind, it is becoming vital for an individual to have positive ratings with the companies or banks which oversee one's income and expenditure. It is estimated that around 20 per cent of the British population does not have access to individual financial packages and between 5 per cent and 8 per cent has no financial support at all, including current accounts.[13] The reliance on cash, or even on cheques, condemns individuals to life at the bottom end of the spending scale and can help keep them there. Not only can one not make a large purchase; with-

out a complex financial infrastructure backing one up, one cannot pay for anything by instalments – such as a car or a personal computer to help one break out of the poverty cycle.

There is no doubt that the approach of e-cash and e-purses creates the possibility of a scenario in which only those judged to be appropriate by banks, credit companies or the like would be in a position to engage fully in the consumer society. Those who still relied on cash would be – indeed, are already – the victim of a double discrimination. It is already the case in some countries (notably Norway) that organisations refuse to take cash payments or charge for doing so. Electronic transfer is already a common practice in Britain, where at the demand of trade unions all salaries are paid directly into workers' bank accounts and where most bills are paid this way; it might not be long before one is charged for doing otherwise. 'Unbanked' people already pay extortionate fees for cashing cheques.

If this were not enough to force people to get a bank account, there is the possibility that those who persist in using cash will have to pay the costs of doing so, which are presently paid by the collective taxpayer. In the words of David Birch, Director of Consult Hyperion, 'the young and techno-hip will eventually tire of subsidising automated teller machines, armoured cars and night-safes for their less well-off brethren.' The administrative costs of e-cash will be lower than those of cash (though the Bank of England would lose its 'seigniorage') but it is likely that it is the better-off who will use it at first because it is they who will be offered the services first, and with most insistence, by the banks which provide them – using geodemographic profiling to find their potential customers. To quote David Birch again:

> 'Participation in the e-cash powered economy will require infrastructure and knowledge, factors which might be more readily available to the better-off than to the poor. Is it socially acceptable to envisage economic structures that lower transaction costs for the e-cash users (the rich) while raising them for the e-cash disenfranchised (the poor)?'[14]

How ICT might alleviate exclusion

Having identified the risks of exclusion in the five main areas – access to hardware, ICT skills, content, consumer choice and the cashless society – we now turn to the ways in which these problems potentially could be alleviated, either by direct action or by developments in ICT practice or in ICT itself.

A highly optimistic story could be told about the likely development of ICT and its impact on social exclusion. This argument would run as follows: information exclusion exists at present but is going to be eroded rapidly as numerous technological developments emerge and the ICT marketplace matures. Specifically, the following developments are significant:

- the real cost of access to telephones, personal computers and the Internet is likely to fall, making ICT access more affordable to many more people
- new forms of home computer will appear which are more affordable and user-friendly – in particular, the stripped-down 'network computer' offering access to software held on the Internet will be a simpler and cheaper form of the PC
- the development of the 'set-top box' (see below) will bring interactive services within the reach of many households now without a computer and will effectively turn the television – virtually universal, even in the poorest households – into a network computer which is truly socially inclusive
- ICT-based geodemographic profiling will allow the development of new forms of targeting of low-income consumers rather than excluding them entirely from marketers' considerations.

In addition, it can be argued that the rise of ICT will provide new ways to tackle social exclusion. For example:

- isolated individuals and communities can make rich forms of virtual contact with others
- individuals and community groups can be empowered by gaining access to new sources of information, knowledge and skills
- ICT can revitalise the process of learning, helping to motivate under-achieving individuals and schools
- ICT can be used to help open up work opportunities for many disabled people through new forms of software and hardware interfaces and by facilitating teleworking from home
- ICT can assist in the process of seeking work and offering services on a local or wider basis
- ICT can help develop new business networks and markets for entrepreneurs in deprived areas.

While these arguments are valid, creative policies will be needed to steer ICT development in these positive directions.

Access to hardware

The problem of access to hardware is primarily an economic one, which can and should be tackled head-on. It is widely accepted that, to prevent a new form of social exclusion in the information age, a determined effort must be made at the collective level to provide universal access to ICT, principally to the Internet but also to the telephone network. Previous revolutionary communication technologies, such as the car or the telephone, took a long time to diffuse evenly throughout society, with a corresponding cost in social cohesion. Other technologies, such as the railway or the television, diffused relatively quickly and contributed to breaking down the barriers, in values as much as in material conditions, which separated rich and poor.

It must be a priority for government to see that modern ICT follows the example of television. Universal public access is the most fundamental and necessary aspect of any public ICT strategy. There is already considerable policy energy behind new initiatives for schools, as in the United States where President Clinton has promised lap-top computers to inner-city children; and in Britain where the independent Stevenson Commission on ICT in Schools has recommended similar initiatives. A major problem is, of course, expense. An injection of private enterprise might be the only way to supply hardware and software to depressed regions and schools, and to sustain this supply: over half the computers in British primary schools are over five years old, a very long time in terms of ICT development.[15] Given the rate of built-in obsolescence favoured by hardware and software manufacturers, the expense of upgrading on a regular basis is prohibitive. A solution might be to move away from a focus on access to stand-alone systems in individual schools, public services and homes towards a focus on access to public ICT networks via these places.

An imaginative report, published in 1997 by the Library and Information Commission, indicates a great opportunity for universal access. Entitled *New Library: The people's network*, it suggests that the massive resources of libraries up and down Britain (4,000 buildings, 700 mobile libraries, 19,000 service points in hospitals, prisons and so on, and 27,000 staff) be coordinated to provide the infrastructure for a national information network. The report insists on the importance of ensuring the network reaches the furthest corners of the country, irrespective of cost, to prevent the highly uneven geographical spread of ICT access that would be inevitable if we were to rely solely on market forces to guide construction of an infrastructure linking homes and workplaces to the 'superhighway' of digital information services.

The report also stresses the importance of involving the private sector to break the monopoly of BT in outlying regions and providing training for people without ICT skills, and considers the problem of staff re-training. (One of the constraints which has inhibited the development of ICT in libraries has been the staff themselves; new training is required to bring librarians up-to-date with the new opportunities of ICT.) It insists that through ICT, libraries can provide a vital service and regain their position as the intellectual, creative and educational focus of communities, rather than decaying through lack of funding to become the musty repositories of unread books.

Finally, the report suggests the establishment of a Public Library Networking Agency, to energise and coordinate the envisaged

library-based national ICT infrastructure. Indicative costs for the report's proposals, broken down into four areas (the Public Library Networking Agency, Content, Training and Development, and Network Infrastructure) are: £57.8 million in the first year; £137.8 million in the second year; some £158 million in the third year; and approximately £124.8 million in subsequent years.[16]

Beyond the conventional forms of ICT which people are familiar with in homes and offices – the PC, perhaps with an Internet connection through terrestrial phone lines – there are new technologies transforming the possibilities of ICT access. BT concluded a deal with the Labour Party before the 1997 general election by which, in exchange for the government waiving the ban on BT providing television service through their phone lines, BT would pay for the installation of broadband TV–Internet access in all of Britain's public agencies – schools, libraries, hospitals, job centres and so on – although not in private homes. Other communications operators have objected to the plan on the grounds that it would give BT a monopolistic position in the market and perhaps in the event it will not be a BT-only exercise. The Government has also been in discussion with Microsoft on plans to develop a universal public 'superhighway' for the UK. If such a deal goes ahead, it would give the government the opportunity to require BT and its competitors to install the facility in the most deprived areas first, thus helping to counter the current structural bias of ICT towards the well-off areas, organisations and households.

Perhaps the crucial development in helping to prevent information exclusion on a large scale will be the set-top box: a device which connects an analogue television set to digital networks, allowing Internet access through the TV without the need to buy a very expensive digital TV set. Various consortia are competing to offer new interactive digital TV services to every household in the UK and the set-top box could stimulate a massive Internet take-up across all sectors and a move from analogue to digital TV transmission over the next decade. However, BSkyB's projected cost for the set-top box is £450-500 – and that does not include the keyboard required for interactive use. Furthermore, it is not certain whether the technology will allow full Internet use; it might only allow one to use email, and not to author information on the World Wide Web. These caveats aside, the set-top box has great potential to be the engine which gets Britain overwhelmingly online. Policies to ensure that access is readily available for those on low incomes will be needed. We endorse the idea proposed by the IPPR for low-income groups to be provided with vouchers for the purchase of digital set-top boxes in order to prevent problems of information exclusion arising from the looming national switch to digital TV.[17]

Skills

As noted earlier, there is far more to getting online than simply having access to hardware. Indeed, the Stevenson Commission's report specifically resisted the idea of throwing large amounts of government money into hardware for schools and advocated spending on support services, especially training: 'The initiatives we are suggesting . . . are clearly capable of being implemented with budgets that are available.'[18] Much as one would like the take-up of ICT to be as enthusiastic as that of TV in the late 1940s and early 1950s, the fact remains that most personal computers and the Internet, at least in their current forms, are simply not as accessible, user-friendly and entertaining as TV.

Therefore a determined effort at informing the public about ICT, and at teaching people how to use it, should be made. Government, central and local, can only do so much to popularise ICT use. Much of the onus rests on the companies who provide the hardware and software to make ICT as psychologically accessible as government must make it materially accessible. A recent survey suggested that 80 per cent of people who had heard of the Internet did not know how to get connected to it.[19] Confusion over the capabilities and functions of ICT combines with ignorance about its operation to discourage many people from experimenting with the new technology. And it is also the case that the Internet, at its present stage of evolution, is a less than tempting prospect for many people who are deterred by its slowness, expense, technical hitches and paucity of compelling content.

Of course, over time the technology will become more user-friendly, just as the costs will come down, and ICT confidence will spread throughout society. As Internet connections increase, more useful and well-organised sites will appear and better guides to con-

tent will be developed. In this context, interest in getting connected is likely to rise.

Skills are less of an obstacle to inclusion than some of the other risks discussed here. Even among the elderly, traditionally the most conservative sector when it comes to new technology, clear explanations of the processes and functions of ICT soon lead to confidence and frequent use. The present school-going generation is already confident with ICT, even if not all young people use it: they are not, at least, intimidated by it or put off by its complexities. A more significant obstacle to take-up is lack of interest: much remains to convince people of ICT's exciting possibilities and of its vital importance to employability and effective citizenship in the next century. As with the access issue, coordinated action by the public, private and community sectors must combine with market forces to overcome this 'teething problem' of the information age.

Content: ICT uses and virtual networks

Access and affordability are two key dimensions of policy for maximising the scale of 'information inclusion' in society. But many people will still be marginalised in the world of ICT unless the content of the information superhighway's services reflects their needs. Internet content will only become relevant to non-professionals as and when non-professionals begin to use it and apply it to their own needs. The problem of content is therefore the same problem as that of actors and the Equity card: you can't get a job without having a card, and you can't get a card till you've got a job. ICT will not be relevant to many people until they make it so. How to do this? There are no straightforward solutions to the problem but there are interesting possibilities for involving more and more people in ICT use, through proactive schemes for job generation and online education. Most of all, ICT can be used to help people to develop personal networks –weak ties, as discussed earlier – as well as to create networks and synergies within and between organisations.

Education

New research suggests that educational software can greatly accelerate learning across all ability ranges. ICT is seen by children as fun and exiting, and blurs the distinction between schoolwork and play. Interactive programmes allow children to author their own information, further involving them in the learning process and combating the boredom associated with the passive reception of information in the classroom.

The Open University, using the television as a universal lecture hall, is the great example of the opportunities which ICT provides for those for whom full-time traditional education is not an option. The ICT facilities in schools can also be turned very profitably into resources which benefit the wider community. The great advantage of ICT is that its flexibility allows progress towards individualised curricula for life-long learning: online education can reach an enormous number of people and yet offer a more tailored course to suit each student particularly.

Employment

Around the world there have been attempts to use the Internet as a straightforward job centre: the Youthnet project in Britain is one example, linking work centres with online access to detailed jobs information. ICT has also facilitated special training schemes for the unemployed, such as the South Bristol Learning Network. The Government's Welfare to Work programme also makes innovative use of ICT for assessment of work and training options for individuals by 'New Deal' advisors in the Employment Service.

Outlying communities, where communication and exchange of information are difficult, are potentially in a position to profit even more than those in urban areas, provided that they can be connected to new ICT networks through public or private investment schemes. The Highlands and Islands Initiative established by BT and partner organisations in Northern Scotland claims to have created 600 jobs over a five year period following the introduction of ISDN services, mainly in back-office functions such as money collection and publishing.

Perhaps the most exciting aspect of ICT in the field of employment generation is among disabled people, previously disqualified from many professions. The artificial voice system used by Professor Stephen Hawking, for example, allows a man with severe speech impediments to continue giving lectures; video links enable deaf people to communicate online using sign language; Braille printers

and speech synthesisers translate between the blind and the seeing world. The potential provided by ICT for people with mobility problems to function effectively in many jobs, in the age of teleworking from home, are enormous; and the same advantages are offered to those who, like single parents, are prevented from going out to work.

Generating synergies: the holistic approach

If one conclusion has been reached from research into successful and unsuccessful ICT projects it is the importance of a holistic approach. The benefits of ICT are in forming new synergies: between different educational establishments, between labour and industrial organisations, between educational and employment institutions, and within communities.

There are many projects around the world which indicate the very great potential of ICT in education, job creation and community regeneration.[20] The clue to the success of these projects is the connection they established between these three inter-related fields. Those programmes which attempt to treat the problem they want to deal with – such as unemployment in a certain area – in isolation are almost bound to fail. For example, Opportunities for Women ran a scheme to teach telework skills to disadvantaged women. Very few of the women got teleworking jobs as a result for the simple reason that there are few teleworking jobs available. By contrast, a similar course, run in a women's prison, was more successful because it combined teaching of teleworking skills with the creation of new teleworking jobs, through collaboration between a women's group, an ICT company that specialises in telework, the prison service and the private sector.

Thus it can be argued that ICT comes into its own when it is used for creating synergies between nominally separate areas of activity which already have a great deal to say to each other and which can only profit by closer collaboration. The Genesis project in Cumbria serves as a standard for all ICT projects concerned with aiding social improvement. This initiative engenders and sustains contact between schools, parents, businesses, social services and community projects. Although still in its infancy, it is already strikingly successful.

The importance of a holistic and community-oriented approach is also illustrated by evidence compiled by BT, which compared use of ICT in eleven schools in the Withywood area of Bristol. Schools with similar penetrations of ICT fared very differently. Those which took a strong community focus enjoyed improved performance, improved teacher-parent relations, rising teacher morale and falling absenteeism (in one case there was a drop in truancy from 20 per cent to 2 per cent in a single term); and there is some evidence to suggest that this progressive trend was mirrored in the community by falling crime.[21]

In contrast, the schools which used their facilities in isolation from the wider community failed to engender enthusiasm among pupils or to have any effect outside the school gates. There are, indeed, probably more cases of ICT projects which began on a wave of excitement and in the belief of infinite possibilities, which failed to have any impact and died of natural causes, than of those which illustrate the great benefits ICT can bring to an area and a community. ICT, therefore, must not be treated as possessing magical properties capable of turning underperforming institutions or deprived areas around of its own accord; nor must it be treated as existing in isolation. Like the telephone, ICT can do no more than facilitate communication. It is a tool for the furthering of goals which must have an existence and a motivation beyond ICT. Put another way, ICT can never work as the foundation of a building; it is the corridors, the stairs, the plumbing. To continue the metaphor, ICT can knock down walls and build doorways between neighbouring houses: but there is little point doing so unless there is a desire in each house for interaction and exchange.

Just as ICT works best when it creates synergies between related institutions or areas of interest, so it can be successfully applied at the micro scale: within institutions. McKinsey's recent report on the future of ICT in schools makes the point that although the UK has a higher ratio of computers per schoolchild than almost any other country, it is not clear that ICT has made a significant impact on educational standards.[22] Their research indicates that many ICT initiatives in schools have focused on just one area (usually the provision of hardware), rather than on how ICT can be fully integrated into education and wider community involvement. Schools who see

the acquisition of ICT equipment, and perhaps an ICT teacher, as their only responsibility in this field find themselves in possession of expensive resources which fail to ignite interest or raise standards. ICT must be integrated into related initiatives, efforts and institutions; it cannot stand alone as a generator of opportunities and social inclusion.

Although it should not be assumed that ICT can be used for creating networks of communication between people or bodies which have little in common beyond similar technology, it does facilitate the free transfer of information. The Internet is particularly good at enabling people to reach beyond local resources to join in wider – even global – discussions on topics of interest. The use of computers for this sort of self-education is inversely proportional to the income of the owner, which is to be expected – it is hard for poor people to justify the expensive purchase of ICT equipment unless it will produce an economic return. Thus ICT can help to provide the 'information' aspect – knowledge about diverse fields of experience – which is lacking to those in network poverty though it is less likely to supply the 'communication' aspect – that is, help establish productive weak ties with useful individuals.

A central factor in the information age is the imminence of online trading, already a reality in some parts of the market. The cashless society is one aspect of this. Another is the threat of the 'retail giants' becoming 'retail monsters' as their superior resources enable them to take control of electronic trading. Conventional wisdom holds that the large firms which at present dominate high streets and out-of-town malls will also dominate the age of online shopping due to their warehousing and distribution networks which can achieve great economies of scale. However, new ideas are beginning to place ICT at the centre of programmes to empower consumers and rejuvenate small trading. Experts are now considering the way ICT may enable small traders, and even private individuals, to attain fair or even preferential access to the market, through one-to-one trading facilitated by basic search engines, thus breaking the monopoly of the retail giants and reinvigorating small business. One such idea is the guaranteed electronic market (GEM), formulated by Wingham Rowan.[23] GEMs would be Internet-based virtual marketplaces offering a secure trading environment for individuals, sole traders, small firms and even corporations. They would facilitate the development of local trading schemes such as the token-based Local Exchange and Trading Schemes (LETS) which have emerged as new forms of local currency for employed and unemployed people alike in many areas. They would help develop new forms of marketplace and create a virtual, easily accessible version of small advertisements, community noticeboards and new forms of barter schemes.

Finally, it will be necessary to bring order to the Internet and to ICT application generally before such schemes as GEMs, or larger versions of the Genesis project, can take off. Dennis Stevenson, chairman of the 1996-97 independent commission of inquiry into the use of ICT in schools, has recommended the appointment of an ICT coordinating group, perhaps chaired by the Prime Minister himself. This would embody a holistic approach to ICT use and would have the responsibility of implementing it wherever practicable. Our findings endorse this suggestion. Enough experts have worked on the problem of information exclusion and enough bodies have set up programmes designed to combat it. But the profusion of initiatives have little coherence, often attack the problems of the information age from different and even contradictory stand-points and collectively have had little impact. A nationally (or even internationally) coordinated supervisory group, with a determinedly holistic approach, seems likely to be the most effective way to harness the great and ever-growing strength of ICT for positive ends in social policy.

Consumer choice

The apparent threats posed by the developments in geodemographic profiling have yet to materialise in a significant way. However, John Goss's fear, discussed earlier, of the rise of a malign 'instrumental rationality' – artificial segmentation systems actually contributing to the segmentation of society, inferences on consumers becoming real through their application – are alarming. As with the problems in relation to access and skills, the natural impulse is to call for regulation or intervention, to limit legislatively the negative effects which seem to flow from ICT. It is because of two factors that ICT has developed so miraculously in recent decades: technological innovation itself and the deregulated marketplace. The progeny of

this union is in the image of its parents: highly resistant to state control and insensitive to the consequences it produces. It is worth pointing out that the information geodemographic companies use comes mostly from government sources, especially the Census Office; only in a society committed to open government could problems have arisen over the exclusion of geodemographically-determined market segments. The only really effective way of shaping the practice of profiling by government intervention would seem to involve legislation on the privacy of information, which would raise significant civil rights issues.[24]

It is still much too early to tell exactly what the long-term effects of ICT use will be in business, administration, and society generally. We do know there is a risk of ICT developments contributing to the reinforcement of existing patterns of social exclusion but we must beware of doom-laden forecasts based on less than conclusive evidence. The concerns which attach to the practice of geodemographics and direct marketing appear to be more serious in relation to issues of privacy and the sanctity of private information, than of forcing people into 'ghettos of exclusion' or 'consumer stereotypes'. It has been estimated that the accuracy rates of geodemographic profiling systems are between 0.001 per cent and 5 per cent accurate: or 95-99.999 per cent inaccurate! In the words of Professor Stan Openshaw of Leeds University: 'If more organisations monitored the effectiveness of their database marketing, then maybe there would be less of it.'

Even the increasing accuracy of profiling techniques can be seen as having positive effects. For, despite the eloquent fears of John Goss, there is significant cause for hope that the problems which geodemographic marketing threaten to inflict will go away of their own accord. It is argued by many experts in financial services that the increasing accuracy of geodemographic profiling is actually alleviating rather than exacerbating the deliberate exclusion of whole groups of people. As the system gets more and more complicated, rather than large swathes of a city being denied certain financial services, companies will be able to identify poverty, or affluence, at street or even house level and therefore provide much fairer access to their products than happened under the crude red-lining system. Roger Luxton, Marketing Manager for the profiling company CCN, says: 'Segmentation is starting to become about inclusion. Rather than rejecting prospects because they do not fit in with the profile for a particular product, organisations are starting to produce products for each segment of their customer base.'[25] The process of segmentation, therefore – the profiling of smaller and smaller geographic units – could even be seen to have a benign effect. Furthermore, such accuracy could overcome the polarisation of social space, as people on different incomes are able to live in the same neighbourhoods without punitive costs imposed by the geodemographics machine.

The cashless society

The more people use e-cash, the less expensive it will be for society as a whole due to the lower transaction and handling costs. But it would be almost impossible to persuade people, especially the elderly, of the necessity for a universal and compulsory switch to e-cash. So assuming that cash and e-cash must operate concurrently, as they do now, but with an ever-increasing proportion of e-cash users, how is e-cash not to become the line of demarcation between the rich and the poor, the included and the excluded?

Any attempt to limit possible negative effects will involve legislation and regulation. There is enough pressure – technical, financial and popular – for the move towards e-cash that any obstacles can probably be overcome through a combination of government action and service provider initiative. Access to the technology can be achieved through 'smart card interfaces' in the set-top boxes discussed earlier. Universal service provision will have to be enforced by legislation similar to BT's telephone obligation. No one must be refused e-cash facilities because the bank feels it will not make money on them. E-purse issuers will have to carefully regulated.

Assessing the balance: the policy challenges

In conclusion, we can attempt to determine how far ICT is exacerbating or alleviating the risk of exclusion in each of the five areas discussed earlier, and identify the main policy challenges for government and other bodies working to overcome information exclusion.

Access to ICT

There can be no doubt that in relation to access to hardware and software, ICT is contributing to the reinforcement of existing patterns of social exclusion. Those on low incomes, with low skill levels, are much less likely to have access to ICT and be confident about using it. Many women, elderly people, ethnic minority citizens and people living in deprived urban areas and in rural areas are much less likely to be gaining benefits from the ICT revolution than affluent urban younger people, especially men. As hardware and software improve in ease of use and relative affordability, more people will get access to ICT and so ICT increasingly will become the common vehicle of social intercourse. This process will accentuate the division between the haves and the have-nots who cannot afford access to ICT and who lack the skills and confidence to exploit it for the purpose of gaining entry to decent work and income.

However, ICT's uses can so clearly be turned to social good that governmental, industrial and community action should be deployed to overcome this division. Lack of access to a personal computer and the Internet is not yet a significant source of social exclusion (although lack of a telephone is a major constraint on those living on low incomes and without paid work). It could become so and we can see how this could happen. This means that we have the opportunity to prevent information exclusion becoming a major factor in wider social exclusion if we act now in the spirit of holistic, anticipatory policy making which is an aspiration of the Government's general approach to the 'joined up problems' of deprivation. The benefit of action on the lines proposed below is that the measures needed to avoid large-scale problems of information exclusion in the future can contribute significantly to tackling the evils of social exclusion here and now as well as to generating new opportunities for wealth creation and organisational effectiveness.

Access to telephone services

As noted earlier, lack of access to new digital ICTs cannot yet be counted as a key element in social exclusion. But lack of access to the 'plain old telephone' definitely can. In the former case, diffusion is still fairly low among households and lack of an e-mail address is not yet a barrier to interaction in work and social life. However, lack of a telephone places someone who is looking for work and social interaction at a severe disadvantage, given the ubiquity of the technology and its intensive use. Not having a telephone hampers job search and is a key barrier to feeling 'included'. As discussed earlier, in some poor estates in the UK access is well below 50 per cent: people on very low incomes are deterred by connection and standing charges as well as by usage costs. Elsewhere in the world increasing access for poor communities has been a key goal for telephone service regulators: for example, in the USA state regulators have over the years agreed a range of deals with telecoms companies that require them to provide 'lifeline' and other services geared to the needs and circumstances of poorer users.

In the UK the regulator Oftel has been more concerned with the needs of business users and connected households than with the problems of non-users. This needs to change if we are serious about tackling existing network poverty as discussed in the first section. One approach would be to make an agreement with major operators that licensing deals will require them to report on the policies they have implemented to assist disadvantaged groups to become connected and to remain so. Reporting by operating companies would need to include evidence that non-connection levels for specific

groups and neighbourhoods were being reduced (as measured, for example, by deviation from the national mean for non-connection). There are many ways of achieving this goal: for instance, charging systems that allow only local or business calls to be made as well as incoming calls, or even subcontracting management to housing estates. If an operator failed to meet these requirements, this aspect of performance would be taken into account at subsequent licence renewals.

An alternative might be to impose a small social inclusion levy on all telecoms operators. Revenues could form a fund open to bids from companies and other organisations on a reverse tendering basis for projects to connect currently excluded households and neighbourhoods. For example, a housing association might bid to push access levels in its homes from 60 per cent to 90 per cent. Such a system could be refined by enabling operators to avoid paying the social inclusion levy if they could demonstrate investment in innovative schemes run by non-profit bodies to overcome information exclusion. This would be similar to the way the Landfill Tax regulations allow waste operators to offset a proportion of the levy by spending it on approved schemes through environmental trusts. By means of such an inclusion levy and inclusion offset, the worst examples of current information exclusion could be tackled swiftly.

Access to digital ICT services

Not being connected to the Internet is not yet a source of social exclusion: in fact many who have used it have concluded that it is largely a complex and expensive way of wasting time. But this state of affairs is changing rapidly as the Internet develops, gaining new users at a faster rate than telephone or television did at a comparable stage of technical evolution. The more people and services are connected, the more useful the Net becomes and the more additional users will be attracted. This should help bring access and usage costs down and exert downward pressure on telephone costs as flat-rate Internet telephony services become more widely used.[26]

Such an evolution through market forces alone will over time greatly expand access. But, as with exclusion from the telephone system, there will still be many who cannot afford access via personal computer. There are many approaches to this issue which could help us prevent it becoming a major problem in the first place.

- Ensure that people on low income can afford set-top boxes to connect their television to new digital TV services. As proposed by IPPR, this could be done by offering vouchers to benefit recipients to purchase set-top boxes, a policy which could be funded from the revenues from selling off analogue frequencies as TV switches to digital transmission.[27] The benefit of such an approach is that it avoids a fixation on personal computers as the route to information inclusion and recognises that there will be a convergence between Internet services and TV as the latter goes digital over the next decade. In effect, the Internet could be seen as a vast new 'channel'. The set-top box is a low-cost basic form of access to digital services which at least will give low-income households the opportunity to explore the benefits of online services.
- Ensure that the BBC has the required level of public funding to become a major contributor to the provision of universal access to digital services via TV, in keeping with John Birt's pledge in his lecture marking the BBC's 75th anniversary: 'The BBC will act as a trusted guide to the Internet, helping users to find information of real value. We want to become the nation's leading Web educator, helping individuals bewildered by the world of online services to take full advantage of them in their day-to-day worklife'.[28] The BBC, as a trusted and familiar part of daily life for virtually every household, has a major role to play in extending access and information to those at risk of exclusion.
- Government can ensure that those at risk of social exclusion have access to ICT and to training in computer and Internet use in key locations: job centres, New Deal Gateway facilities, public libraries, schools and colleges, benefits centres and community centres. ICT 'kiosks', suitably designed and located in each of these environments, could open up the ICT world to many who cannot yet, and may never, gain access via a home system. Job seekers on the New Deal who do not have a telephone or personal computer should have free access to telephone and e-mail services at such centres for job search and training.

- We endorse the view of the Library and Information Commission[29] and of IBM and the Community Development Foundation[30] that the public library is a key contender for the role of inclusive ICT resource for local communities and that a wired library service could be a significant focus for raising public awareness of ICT possibilities and for developing individuals' and community organisations' skills. Personal e-mail services could be accessed via such community facilities for those lacking the means to get online via a personal computer system at home, as could shared services such as assistance and training in Web site development for community organisations and small businesses.
- Funding a national network of libraries acting as new community resources for ICT should be seen as an investment in the prevention of information exclusion and as a contribution to tackling existing forms of exclusion. The resources can be obtained from arrangements with major operators such as BT and Microsoft, who have a significant interest in entering a partnership with government to bring ICT access to schools, libraries, hospitals and other public services; and from more imaginative use of the funds generated by the National Lottery. Funds from the Lottery might be allocated to projects within this wider programme for information inclusion. Targets should be set for information inclusion: for example, that 75 per cent of all households should have a home or library-accessed personal e-mail address by 2003.
- Partnerships with major ICT operators to wire up public facilities to interactive service networks should begin by providing access and relevant skills support in the most deprived areas with high levels of unemployment, poor community services and low skills, such as those areas identified as action zones for initiatives on education, health and employment.

Skills

As with access, the skills issue can be readily tackled with a sustained programme of direct action that will help avoid problems in the future. Presently a major barrier to ICT use, it is a problem that will largely disappear as ICT use spreads but nonetheless if the issue is left to market forces and the organic growth of ICT literacy, a significant number of people and neighbourhoods will still be ill-equipped to make effective use of ICT services.

The issue of skills development is closely related to solutions to problems of access. Simply providing a publicly-accessible array of ICT services via kiosks and wired libraries and schools will not solve problems of information exclusion or contribute to tackling wider social exclusion. Strategies and budgets for connecting public facilities must include resources and plans for equipping people with relevant skills for getting the most out of ICT. Here the BBC and other major ICT operators have a key role in raising awareness and providing information. And we need to ensure that training services are available in public libraries, schools and colleges and in job search agencies for people who need them and in particular for those on low incomes.

Content

The problems, and therefore the solutions, are less clear-cut when we consider the content and uses of ICT. In the fields of education, employment and community regeneration there are tremendous opportunities for sustaining networks and creating synergies between and within organisations, so long as the holistic approach is maintained and programmes do not attempt too much. Government can play a role here in redesigning the welfare system to enable and encourage people to use the networking strategies appropriate to the digital environment. The problem of content is connected to that of skills: as people become more confident with ICT, so will ICT become more relevant to them.

The development of digital television will play a major part in the acclimatisation of large parts of the population to the ICT environment. The personal computer and modem route to the Internet is complex and costly, and will be intimidating for many people who have so far missed out on the computer revolution. But the opportunity to reach digital services and explore them via the friendly and familiar mechanism of the TV will surely be a catalyst for awareness raising and confidence building. Here the BBC and other operators have a significant role as educators and trusted guides to the ICT world and there will be social pay-offs from ensuring that access

to set-top boxes is available for those on low incomes, as discussed earlier.

Government can also play a key role in making content more attractive and relevant, and thereby boosting demand for ICT access (and influencing cost of access) by greatly increasing its own use of the Internet. John Browning, European Editor of *Wired*, argues that Government should:[31]

- use the Internet to answer queries and provide advice about taxes and regulations, and make this facility widely known via TV, advertising and public information services
- support integrated health and social care in the community by linking up carers to public health and social services via ICT
- provide networks linking schools, colleges and universities to each other and to other public services, making 'just-in-time' access to courses available on a large scale
- improve voluntary organisations' access to ICT to give them better information about the problems with which they are concerned and the organisations and initiatives which can help them, and to improve their coordination with the activities of government at national and local levels.

Government working in partnership with business and the voluntary sector could also make effective use of ICT networks to boost levels of local voluntary activity to build social capital. For instance, pilots of Internet trading systems – guaranteed electronic markets – could be established, as proposed by Wingham Rowan.[32] This could be funded via the Lottery, as could a major Millennium initiative to set up an online Internet Exchange for volunteering and mentoring, providing details of how to volunteer in every community and also providing a brokerage service for secondment–mentoring links between business and voluntary bodies, schools and other bodies. Such schemes could provide highly relevant content to the Internet which could generate a self-sustaining rise in demand and new access opportunities.

Consumer choice

The issue of consumer choice is also a complex one. It is as yet too early to be really sure of how geodemographic profiling is going to transform society culturally and economically, though it is clear that any problems which it raises are unlikely to be remediable through government action without serious inroads into the concept of the open society. Perhaps the inaccuracy of the profiling techniques will render them more or less irrelevant to the issue of exclusion, as Professor Openshaw argues; perhaps their accuracy will create 60 million 'targets of one' and actually empower individuals, as marketers are forced to tailor their products to the consumers rather than forcing the consumers to fit the marketers' stereotypes: it might also allow people of different earning levels to live in the same neighbourhood without added costs, so enabling the building of diverse networks and a measure of social cohesion.

The problem is best tackled by addressing the other dimensions of information exclusion, with the aim of lifting as many people and areas as possible out of poverty and the associated risks of discrimination via ICT-based profiling systems. However, the development of red-lining techniques and postcode discrimination needs to be monitored by policy makers.

The electronic money economy

The benefits and dangers of the cashless society will become more apparent over the next decade, as will public attitudes to the idea of doing away with cash. Whether a cashless economy will serve to exclude further those at the bottom end of the income scale will depend on policy choices made during the lifetime of this Government: cashlessness is creeping up on us unawares and its inevitability makes it necessary to anticipate its dangers and seek to influence its development. Legislation obliging universal access to basic e-money services – perhaps simply an interest-bearing account and an e-purse by banks is a sine qua non of the cashless society.[33] The potential problems will also be largely prevented if there is a large-scale development of electronic finance and payment services over digital networks accessible via television rather than simply via PC connection to the Internet. This development would, if accompanied by measures as outlined above to make set-top boxes afford-

able to all those on low incomes, make electronic money services more readily available to marginalised groups than conventional banking services currently are.

Conclusion

Information exclusion is a twofold problem. At present, it is most obvious in the lack of access of many poor people to the telephone. In the future it could be related to lack of access to digital interactive services that may become essential to thrive in work and social life. We have the means to solve the first problem in short order. We have the time, resources and knowledge to develop policies now to prevent the second problem arising and in doing so we can help alleviate, if not solve, many of the existing ills of social exclusion afflicting those on low incomes and those out of work. Information exclusion is often seen fatalistically as an inevitable feature of the wired society of the next century, but any such fatalism should be rejected out of hand. Preventing information exclusion is achievable and will make a major contribution to the long-term attack on social exclusion in the UK.

Notes

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29 See note 16.
30 See note 21.
31 See note 27.
32 See note 24.
33 See note 14.