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Chapter 7.4
Challenging Digital Inequalities:
Barriers and Prospects

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ABSTRACT

There are substantial inequalities in access to and use of the Internet. These inequalities build on enduring social and economic inequalities that have themselves been rooted in previous rounds of the development of electronic technologies and have largely resisted public policies designed to remedy them. Rapid developments in the use of the Internet have great potential for commercialization and democratization, but digital inequality means that this potential is not always exploited to the advantage of the poorer sectors of the community. Recent public policies have attempted to remedy digital disadvantage, but there is little evidence that they are fundamentally transforming them. Constant innovation enables the more advantaged sectors to advance their position, while many are still excluded from compensatory attempts at catch up. An increasing body of experience suggests ideas for new approaches, but the magnitude of the challenge of eroding digital inequality should not be underestimated.

INTRODUCTION

The increasing availability and use of advanced information and communications technologies (ICT) have transformed many aspects of social life, business, education, government and democracy, and enthusiasts of the new technologies perceive even more profound productive, liberating and democratizing transformations in the future. At the same time, there has been increasing concern that large sectors of national and global populations have been excluded from the benefits of these innovations and that they may be used to further entrench the position of the advantaged

and the powerful. This paper explores the mixed blessings of the ICT revolution particularly as it relates to ideas of electronic commerce (e-commerce), electronic government (e-government) and electronic democracy (e-democracy); places the analysis in a longer historical frame that helps to assess both the positive and the negative features of recent significant developments in ICT; and explores aspects of the emerging patterns of digital inequality and the challenges for policies designed to tackle them.

DIGITAL INEQUALITY

The concept of *digital inequality* is perhaps a better way of conceptualizing the issues that surround the concept of digital exclusion or the digital divide, since it is differences in degree of exposure to and use of digital technologies, rather than complete exclusion, that best summarizes the reality of the phenomenon and the ideas that motivate study in these fields. Digital inequality relates to phenomena with a much wider span than the Internet, but it is access to and use of this medium that is the subject of this chapter. Although the focus is also upon the United Kingdom, the issues that it deals with relate to other states and also, of course, have a global dimension as well.

In this chapter, it is argued that inequalities in access to and use of the Internet are additional manifestations of patterns of social, political and economic inequality that have been continually experienced by the poorer and more disadvantaged sectors of society. Poverty and inequality are relative phenomena that have been persistent features (although with varying characteristics and degrees of incidence over time) in modern societies. Constant processes of technological innovation inevitably mean that some sectors of society are better placed to take advantage of the new methods of production or service delivery and, thus, forge ahead in benefiting from them. While other sectors eventually benefit from the trickling down of these innovations and their elaborations at a later stage, when the first-time beneficiaries or replacement innovators are moving on to benefit from yet further rounds of innovation.

Digital inequality, like social and economic inequality, is reproduced through the generations. People are born to financially resource rich or poor households or somewhere in between, and households differ in the degree to which they are able to benefit from technological and social innovation. There are also major differences in cultural resources and repertoires in these different households. The ability to benefit from formal systems of education and acquire valued educational qualifications differs greatly between them. The expansion of educational systems in the last 100 years, including the development of higher education, has only modified, in a minor way, the association between levels of education and social privilege or disadvantage. Successive governments over the last half-century have specifically attempted to remedy the educational disadvantage of poorer households, but the broad structure of social and educational disadvantage has remained the same even after a further eight years of New Labour initiatives in the field (Kelly, 2005).

Reich (1993) has distinguished between social strata in the degree to which they are able to manipulate symbol systems, arguing that advanced abilities in this respect are the key to ensuring that workers are able to take advantage of opportunities in a modern knowledge-based economy. In the present day, these differences are manifest in the use of digital technologies and the Internet. Different social class abilities to utilize and benefit from them are, thus, the most recent manifestation of much more enduring and persistent sets of major social-class differences in levels of cognitive and occupational skills and educational attainment. Just as generations of attempts to produce equality of educational opportunity have not removed the problem of educational inequality because as general educational standards are raised, some

groups continue to forge ahead to higher levels to keep their absolute and relative advantage; so there is a constant challenge of catch up as specific initiatives to remedy the digital handicap operate in an environment where new innovations are enabling the more advantaged to maintain or advance their position ahead of the field.

150 YEARS OF ELECTRONIC COMMUNICATION

There is a danger in discussions of the impact of the Internet and digital technologies to exaggerate their novelty and significance. The introduction of the telegraph and the global extensions of cable telegraphy in the 19th century have been seen by some as revolutionary in their impact in their times as the Internet in more recent decades (Fuller, 1851; Standage 1999). Such innovations were as integral to the global capitalist revolution of the 19th century, with its outbursts of productivity and the creation of global labor, capital markets and networks, as the Internet is to today's remarkable changes. Indeed there are those that argue that the years leading up to 1914 witnessed greater relative degrees of globalization than in the present day (House of Lords, 2003). If these and subsequent electronic innovations were as integral to the development of global capitalism and its associated international and internal state inequalities, why then should one expect any lesser degree of inequality from the more recent developments in electronic communication?

If we examine the diffusion of major household electronic communication technological innovations in the course of the 20th century subsequent to telegraphy, such as the landline telephone, the radio, black and white and then color television, personal computers, mobile telephones and so forth, we observe a geographical spread and social trickling down of these innovations as they emerge in key metropolitan urban centers of technological development. They are initially taken up by richer households that can afford the new devices at relatively high initial prices, then gradually percolate down the class social structure and eventually become more generally adopted as they become more efficient and cheaper. In the early days of mass personal computing in the 1990s, the neophyte domestic and office users experienced many hiccups. They needed the assistance of technical advisors or more expert friends in order to make use of the, by contemporary standards, less sophisticated hard- and software that was then available. These experiences were very similar to those experiences of people who can remember the spread of black and white television in the 1950s, when friends and neighbours advised on how to adjust the controls on the TV set in order to receive a good picture.

In time, the continuous improvement of successive rounds of development in these technologies makes them much more user friendly and more widespread and valuable in their use. Also, these reflections emphasize the importance of assistance from family, friends and work colleagues in making best use of these new devices. The human culture surrounding them ensures better use and needs to be considered as a factor supporting the spread and use of innovations. Think, for instance, about the talk that surrounds the use of mobile phones by young people as they demonstrate new features to friends and use them to communicate. There are perhaps here some clues to help in propagating knowledge and interest about digital communications amongst groups with less familiarity and skills in the use of new technologies.

INEQUALITIES IN ACCESS TO AND USE OF THE INTERNET IN THE UK

What, then, is the evidence about the dissemination of one of most recent electronic forms of communication to be made available to mass publics—the adoption and use of the Internet and

its place in the pattern of social inequality in the United Kingdom?

According to National Statistics Online (2005) in May 2005:

Over half (55%) of households in Great Britain (13.1 million) could access the Internet from home in May 2005. Almost two thirds (60%) of adults in Great Britain had used the Internet in the three months prior to interview in May 2005, of which 58 per cent had bought or ordered goods, tickets or services. A higher proportion of men (63%) than women (52%) had used it for purchases. People aged 25-44 were most likely to buy on-line (61%) while people aged 55-64 were the least likely to buy on-line (48%).

Of those adults who had used the Internet for personal or private use, in the 12 months prior to interview, the most common purchases were travel, accommodation or holidays (52%), videos or DVDs (41%), music or CDs (40%) and tickets for events (35%).

Just under one third (32%) of adults had never used the Internet in May 2005. Of those who had not used the Internet, 43% stated that they did not want to use, or had no need for, or no interest, in the Internet; 38% had no Internet connection; and 33% felt they lacked knowledge or the confidence to use it. These adults were also asked which of four statements best described what they thought about using the Internet. Over half (55%) of non-users chose the statement I have not really considered using the Internet before and I am not likely to in the future'. This core group of non-Internet users represented 17% of all adults in Great Britain.

In summary about one-third of the UK population still does not use the Internet (with about half of those indicating that they are not likely to use it in the future). Another third of the population takes advantage of the Internet for the purchase of goods and services and the final third has other uses for it.

Data from the 2002 *British Social Attitudes Survey* (Economic and Social Data Services (ESDS), 2005), gives some information on how access to and use of the Internet was structured socially. In that year, 45% of households had access to the Internet, but this access varied from 12% in households with an annual income below £6,000 to 80% in households with incomes of more than £44,000. There was also a marked variation in use of the Internet by highest educational qualification; 86% of those with a university degree having used it compared to 30% of those with the lowest school-leaving qualifications and only 10% of those with no qualifications at all—a group which constituted a quarter of the whole adult population sampled (ESDS, 2005). In social class terms, 71% of professionals and managers used the Internet, but among working class occupations, the figure was 27% (Bromley, 2004). According to the recent Office of the Deputy Prime Minister (ODPM) report (2005), in 2004 85% of professional and managerial households had home computers with Internet access compared, at the other end of the social scale, to 35% of those people who were unemployed or relied on social benefits.

To a marked degree, then, access to and use of the Internet is highly socially structured with groups that are more socially and economically advantaged also having greater exposure to this rapidly developing and important social and technological innovation. In terms of gender differences, men are slightly more likely to use the Internet than women (53% compared to 48%, in 2003).

A 2000 study of usage of the Internet in the EU indicated that the primary uses of the Internet (among, of course, that minority of the population that used the Internet) were e-mail with friends, family and work colleagues (69%); 47% used it for online education and training, 38% for product information, 38% for sport and recreational information, 28% gaming, 23% for job searches and 15% for government Web sites.

Similar findings are evident in the United States (Barney, 2004, citing Norris). The *British Social Attitudes Survey of 2002* indicated that the major uses of the Internet were e-mail for 33% of the whole sample interviewed (i.e., including nonusers in the base figure); 19% for shopping, travel and weather information; and 13% for the news and education and training (ESDS, 2005).

There are clear age differences in use of the Internet with younger people becoming much more familiar with its resources and opportunities, than older people. In 2003, it was estimated that 74% of 18 to 24 year olds used the Internet, compared to only 15% of those over 65 (Bromley, 2004). In 2002, two in three 11 to 18 year olds used the Internet for school work; 70% used computers for games; and 90% for school work (National Statistics Online, 2005). We should note that these figures still indicate that about one in four 18 to 24 year olds did not use the Internet –another indication of the education and skills deficit among some of the more recent graduates of the educational system.

The use of the Internet is, thus, becoming more and more common in British society, but there are substantial sectors of the population—about one in three—that have never used it. These nonusers are heavily concentrated among the poorer, older and less educated sectors of the population, with the pattern of digital inequality closely mirroring the pattern of social and economic inequality. Users in turn can be differentiated into heavy users, who use it extensively for work, leisure, friendship, kinship, education, commerce and recreation, and a more casual set of users with less intensive patterns of involvement in the Internet.

E-BUSINESS AND DIGITAL INEQUALITY

The significance of this social patterning of inequality in access to the Internet is all the more important when one considers the rapid developments in the services available and how they impact on peoples' lifestyles and economic opportunities.

It has long been argued that "the poor pay more" (Caplovitz, 1967), and there is no reason why innovations in Internet-based services should necessarily countervail this tendency. Rapid developments in the services now available on the Internet mean that people without access to it, or the skills to utilize it, are probably missing out on all types of new and improved services and opportunities. Some relevant examples follow. First are travel services, which is, as we have seen one of the major uses of the Internet. These examples also demonstrate that while official government policy statements emphasize the productivity and cost-lowering gains from e-commerce in relation to, say, the growth of budget airlines, it does not explicitly state that these gains may not be available to some categories of the population. Overall the report estimates that use of the Internet saves the average user £268 per annum with benefits, of course, that accrue to the better-off sectors of the population that can afford and utilize the equipment (ODPM, 2005).

In relation to transport services, poorer people are much more likely to rely on intercity bus services for their longer distance travel, but they may not be able to take advantage of new cheaper intercity bus services that reduce costs by improving load factors and lowering administrative costs through Internet-based seat booking. This disadvantage can be mitigated in that some providers allow bookings by telephone. But credit or debit card numbers may be required to make these bookings, and many poorer people lack these means of credit. Ten percent of Scottish households, for instance, do not have a bank or building society account (Scottish Executive, 2005). Some new budget hotels and low-cost airline flights can, however, only be booked over the Internet—potentially excluding large sectors of the population from benefiting from these new services because of the lack of the appropriate

technology, skills, financial status or lifestyle to have appropriate financial credit.

Travel agents, who have in the past been able to deliver holidays in the sun and elsewhere on an attractive price basis to shoppers in the High Street, often from modest income households, are finding bookings decreasing as bookings by individuals over the Internet become more common. New businesses that offer such services electronically over the Internet are expanding rapidly, while conventional travel agencies find their business diminishing. People, who rely on travel agents for foreign travel and holiday bookings, may find themselves with a decreased array of opportunities. Travel agencies are seeking to meet this challenge by providing new more exotic and challenging destinations, where individual travellers might prefer to have the security of agency assistance. However these opportunities are at the more expensive end of the market. Perhaps there is a role for low-cost agents to be electronic assistants to poorer and less Internet adept customers as they have historically, in many cases, been for the less well-off general public.

Another area where the less advantaged might be further deprived by their lesser ability to access and utilize the Internet could involve networks of interpersonal relations. As we have seen, e-mail is becoming an increasingly common form of communication among people for business reasons but also for personal, friendship and kinship relations. The success of sites such as Friends Reunited is an indication of how the Internet can enrich peoples' personal networks and keep them in touch with a wider circle of friends. Given that social isolation is a known concomitant of social and economic deprivation (Hills & Stewart 2005), the inability to access and utilize these new channels of interpersonal social communication may further enhance the social exclusion of the less advantaged sectors of contemporary society.

E-DEMOCRACY AND E-GOVERNMENT

There has been no shortage of vision with respect to the implications of new information and communications technologies for democracy and the business of government. Some see a potential transformation in the effectiveness of democracy in the ability of citizens to interact with their government representatives through the new electronic means of communication (Berra, 2003; Chadwick 2003; Ward, Gibson, & Lusoli, 2003). E-mail (like the telephone before it) potentially enables closer contact between citizens and elected representatives. Interactive Web sites can enable more responsive and speedier communications between them. Both tools also allow citizens to communicate and organize more effectively amongst themselves. Other analysts (Mehta & Darier 1998; Shelley, Thrane, Shulman, Lang, Beisser, Larson, & Mutiti, 2004; Wilson 2003) are more skeptical about the liberating and democratizing potential of the new technologies, placing greater emphasis on the exclusionary and socially distributed nature of access to the Internet and the differences in information literacy among the population that mean that some groups are less able to take advantage of these new opportunities.

E-democracy concerns the roles of citizens and residents, collective organizations, political parties and elected representatives in utilizing ICTs to support or enhance their involvement in influencing the decisions of governments. E-government is about using ICTs to facilitate the business of government, the administration of services, the propagation of information and the delivery of entitlements to citizens and residents. As the above discussion suggests, e-democracy has proven more problematic than e-government. Many of the operations of government are business-like, and the business of government can be more readily organized on a systematic or electronic basis, than can the more messy politics of democracy. (Not that large scale government

computing projects have not had their share of major organizational problems.) Governments have exemplary Web sites and organize more of their activities and services on an electronic basis. Three quarters of UK government services are now available electronically. Four million taxpayers accessed self-assessment online in 2004. There are 8,600 job centers with touch-screen employment search facilities (and plans for extensive staff lay offs), and 21 million benefit payments are being made electronically into bank or building society accounts.

The use of ICT for the business of government raises all sorts of issues that concern its relationship with its citizens in a democratic society. Is universal electronic service delivery a valid objective, when large sectors of society are not able to utilize the technology effectively? Should it be a condition of school graduation or the granting of citizenship that individuals are competent with ICT so that they can effectively deal with electronic government? How can the old, the ill, the disabled and the illiterate be enabled to benefit from available services? As a society we are still in the early stages of appreciating the scale of the challenges involved and developing appropriate responses.

TACKLING DIGITAL INEQUALITY

How, then, do we meet the challenges of digital inequality? Is it possible to devise strategies that might help the disadvantaged to catch up or, at least, lessen the distance from the groups benefiting most from newer and more established opportunities?

Given that social and economic inequality are so deeply rooted and that patterns of digital inequality are enmeshed in differential patterns of social advantage and privilege that have proved so difficult to eradicate, there are grounds for skepticism about any major initiative to eliminate or substantially modify the known patterns of digital inequality. If decades of major initiatives to produce equal educational opportunity have proved so unsuccessful, why should specific initiatives in this direction have any greater chance of success? In this context, we might note the contrast between the recognition of the persistence of continuing gross social class inequalities in educational opportunity as expressed in the comments of the Secretary of State for Education and Skills, despite decades of attempts to remove social differences in educational opportunity, (Kelly 2005), and the more upbeat and visionary expectations of the new UK Digital Strategy (ODPM, 2005) to reduce the digital divide, which envisages turning in 2008 to mop up the residual problems that will remain.

There also, perhaps, requires some discussion about whether governmental intervention is an effective way of dealing with social inequalities in access to and use of the Internet. After all, the major forces promoting the use and dissemination of the Internet seem to be in the market, the work place and the home. Home and work are by far the most important places whereby individuals access the Internet. Libraries and community centers come way behind with the respective percentages being 75 at home, 20 at work and 11 in libraries and community facilities. For people aged 18-24, the respective percentages are 68, 46 and 17 (Bromley, 2004). As Internet access becomes cheaper, the home computer with an Internet connection will probably become as common a domestic electrical device as the television and CD player. There is certainly a need to think through whether the most effective way to challenge digital exclusion might be through domestic-based services, assisting with the provision of relevant hardware and training in homes or stimulating interest and in-home use through clubs frequented by potential or actual users, as opposed to focusing on community facilities.

The strongest argument for governmental policy initiatives seems to lay with the fact that the government is determined to offer all its services

electronically and it will require and expect that citizens benefit from and receive their services though these media. While three quarters of government services are now available electronically, it is a salutary reminder of the challenge ahead in meeting government ambitions that there are only 5 million users, out of a population of 59 million, registered with the Government Gateway for 50 electronic services from 20 government departments (ODPM, 2005).

Given then that there is a case for governmental policy initiatives to modify and where possible eliminate digital inequality, if only to ensure that all citizens are able to take advantage of the electronic delivery of services (and to participate in emerging forms of democracy, markets and social participation as well), then there needs to be consideration of the forms that these initiatives should take and how they should be delivered.

Issues of timing will have great importance in this respect. Perhaps the most effective way to ensure the widest reach of such policy initiatives in the longer term is through the primary and secondary school system through which nearly all UK adults graduate. Such a strategy will reach nearly all of the population, but it will, of course, take decades to percolate through the whole population. There is increasing emphasis in school-based education on information and communication technology literacy. We have seen how younger people are much more equipped with the necessary skills and more familiar with the uses and benefits of the Internet and digital technologies. As more and more cohorts of young people graduate through the school system and go to higher education, greater and greater proportions of the successive generations are going to be able to take advantage of the resources of the digital age. But we should be aware that there are still major problems with adult literacy. We cannot be certain that the education system will succeed in ensuring that all school graduates are properly equipped to take advantage of the possibilities of the new era and are sufficiently adaptable to take advantage of subsequent innovations that come along. On the basis of past performance of the education system and society at large, the existence of an educational underclass, lacking the necessary basic skills for the exploitation of the opportunities of the digital age, cannot be ruled out for the future. Even more certain, however, is the likelihood of there being continuing digital inequalities in terms of great variations in the relevant knowledge, skills and abilities of people graduating from the various levels of the education system, from those leaving at age 16 or earlier—including some lacking basic literacy skills—to those leaving after age 26 with advanced post-graduate training.

A second major set of institutions that could be the basis of policy initiatives to confront digital inequality among those who have already passed through the system of primary and secondary education are those involved in adult basic and community education. They would seem to be very well placed to take a lead in strategy in this field, since they usually have premises and staff that are well suited for the purposes.

A third base for initiatives to reach those in need of access to the Internet and assistance with the development of skills to utilize it effectively is the national library system, which is gradually adapting its services to meet the needs of the present day. The wide provision of library premises and staff suggest that they would be a good base for the delivery of digital and Internet access and training, and they are to some extent undertaking such roles.

COMMUNITY-BASED INITIATIVES

Voluntary and community sector organizations continue to be seen by the present government as key partners in the delivery of social and ICT services, especially in areas of social deprivation. They have been involved centrally in initiatives to tackle digital inequality. The Scottish Execu-

tive Public Internet Access Initiative launched in 2002 (Scottish Executive, 2004) provided up to five personal computers (PCs) with Internet access available in shops, pubs, post offices, hairdressers and community centres and in organizations devoted to disadvantaged social groups, such as single parents, ethnic minorities and New Deal clients. By 2003, 1,300 PCs had been provided in venues with an average of 2.2 PCs per site. The wide dispersal of these machines meant, however, that they were often not accessible or usable and often lacked technical support. The researchers state that:

The majority of machines we came across were either switched off or powered down. Many users had problems logging on and getting started. This is likely to be off-putting to anyone wanting to get quick access to the Internet.

In many cases, staff members were unable to provide assistance to learners and users. Business sites (shops, Internet cafes), which accounted for the majority of the provision (61%), were more readily visible and accessible than public provision (libraries); these in turn were more visible and accessible than nominal community provision. Estimated use levels were at about 3% of the population of Scotland. It was also estimated that between 170, 000 and 220,000 people used the machines annually, including tourists and non-residents. The program has added to resources, particularly in disadvantaged areas, and has been of use to the unemployed, but the report argues that it does not appear to be a good way of attracting new users or older potential users.

The Scottish digital inclusion strategy does not appear to have been as effective as the English program, based upon UK online centers. The Scottish initiative dispersed PCs in small batches in numerous locations, which were not necessarily accessible and did not necessarily have adequate technical and learning support for learners. The online centers, which are currently established in 88 neighborhood renewal areas and 2,000 deprived council wards, were more concentrated in learning centers, where there was technical and learning support (ODPM, 2005). The 2005 UK digital strategy (ODPM, 2005) proposes a competition to build the best local authority-based ICT public service centers that would enable citizens to access e-government services, would offer ICT training and would be specially targeted, initially, to the most disadvantaged localities, but also available more generally. This seems to be a good concept, since it would allow the provision of well-resourced centers staffed with technical assistants and trainers, as well as the relevant hard- and software. There is an initial challenge here in deciding on the location of such centers. Should they be based in areas of social deprivation or more centrally in the city, where they would be available to a wider range of citizens? Even then it might prove difficult to find one location that is adequately centered for all areas of deprivation. Is there not a case for investigating a proposal for mobile facilities that could serve neighborhoods on a regular basis, in the way that mobile library services operate? And, although initiatives might focus on areas of social deprivation, does this approach effectively reach the large numbers of the socially deprived people living in neighborhoods that are not officially classified as deprived?

CONCLUSION

There is now a considerable volume of experience and a wide network of institutions that attempt to overcome inequalities in access to and use of the Internet, but rapid, continuing technological and commercial developments mean that there is a constant challenge to assist the less fortunately placed to participate in and benefit from the new digital economy and society. There is little evidence to suggest that the combined effect of these institutions and policies do anything fundamentally to reverse the patterns of educational, social and

digital inequality that are so entwined with one another and have developed out of long historical processes. At each social level, there is a process of "skimming," whereby the most qualified, eligible or prepared actually benefit from innovations or come forward to receive training and support in ICT innovations. There is no "Heineken" policy solution that reaches the parts that others do not reach. The aspiration in the recent digital strategy for the United Kingdom (ODPM, 2005), which states that by 2008 the government can attend to whatever residue there is of the digital divide, is excessively optimistic. New digital inequalities are being created and reinforced at the same time as official policies seek to remedy older ones. The digital divide will remain as a continuing and dynamic issue that constantly needs attention.

Given the scale and the continuity of the current challenges, there is a need for some new ideas to tackle digital inequality. While the formal systems of learning outlined above are clearly basic to the task, they need supplementation by initiatives that might begin by recognizing the importance of informal learning—stimulating interest in learning by those in need by forming clubs and providing advice and assistance through informal channels, such as friends and others who are in regular contact with them, that is, developing and extending an informal culture that extends beyond the formal sites of learning into the lives of those in need of support. There is still a big gap between the education, community and voluntary sector institutions that seek to deliver support and the actual lives of many of the more deprived sectors of the population. Age Concern England, which is greatly concerned with digital exclusion for the older citizen, has in place a number of initiatives to bridge this gap. Numerous other initiatives have similar aims but confront major challenges in reaching throughout the community. New approaches are needed to bridge the gap between aspiration and achievement. Perhaps they can build on the superior knowledge, motivation and abilities of younger people who are much more familiar with the new technologies and their potential. Can school pupils and young people be encouraged to assist peers and older relatives, neighbours and community contacts to acquire the necessary skills and interests? But as the contrasts between English and Scottish initiatives demonstrate, there is also a clear need for physical bases and more formal technical and learning support to make the most of such initiatives.

It is clear that we are only at the earliest stages of realizing the profound implications of the widespread application of innovations in ICT, for the way in which business, the political system and society is organized and for assessing their impact on the different social groups. There is ample evidence of the liberating and productive aspects and potential of the new technologies, but there are also continuing and worrying implications for social control and social inequality that may need monitoring and mitigation. Genuine and significant policy innovations have been made to attempt to redress the newly emerging patterns of inequality that build upon inherited and entrenched patterns of economic and social inequality. Overcoming them is no easy task, and there is much to be learned from examining the experiences of existing initiatives and seeking new approaches that can overcome their deficiencies. Business itself probably has a considerable incentive to be a partner in this process by extending electronic literacy into all sectors of society, not only to cultivate the skills and competencies of its own work forces, but also to help develop new markets and products that will help it prosper.

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