

# Information technology and rural development

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**Abstract:** This paper outlines how the widespread belief that we are experiencing an ‘information technology revolution’ has aroused concerns about unequal access to its perceived benefits. These concerns are explored both through general perspectives on the information revolution and in the specific context of approaches to rural development in Europe, in particular the Highlands and Islands of Scotland. Various levels of government have launched initiatives to stimulate the use of information technology (IT) in the territories under their jurisdiction. This paper focuses on the rationale behind one widely employed strategy, encouraging IT use through promotional campaigns.

**Key words:** information technology, promotion, rural development.

## I Introduction

It is widely perceived that we are in the throes of an ‘information technology revolution’ (Castells, 1996: 5), said by many writers to bring with it momentous social and economic transformations. In what follows, I begin by outlining some of the key characteristics of this perceived revolution. While some accounts are optimistic about the resulting prospects for civilization, many others express concern about the consequences of this revolution for those who, for whatever reason, are unable to take advantage of the anticipated benefits of the new technology. Both of these perspectives share the view that information technology (IT) and the ‘new form of society’ (Castells, 1997: 1) it is said to usher in, offer considerable opportunities to those in a position to take advantage of them. Concerns about access to these

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opportunities, however, have been expressed on behalf of groups seen to have difficulty in accessing a range of other opportunities and resources. In order to illustrate how different writers have identified groups who stand to gain or risk losing out, and have adapted debates about access to IT to suit their respective developmental agendas, I outline the impetus behind the concept of 'rural development' in Europe, and show how concern about differential access to the opportunities seen to be afforded by IT has been interpreted within that field.

The response of policy makers and development organizations in Europe and elsewhere to such concerns has been to attempt to address the range of 'barriers' believed to prevent different people from using IT, which I illustrate here primarily through examples drawn from the UK. Such barriers include issues such as a lack of suitable telecommunications infrastructure or of the financial resources and time required in order to acquire and learn to use new equipment. However, in this paper I focus instead on a barrier said by one report to be more fundamental, namely a 'lack of interest' in IT, and consider the efforts of a number of governmental organizations, again using examples predominantly from the UK, to address this through 'promotional activity'. I then look at a selection of studies on the extent or nature of IT use that offer evidence that may help evaluate the success of this policy. More fundamentally, however, some of these studies also suggest that the perception of an information society bringing unequivocal benefits to all of those able to participate in it is one that many IT users and nonusers alike do not share. This disparity between the developmental strategies considered here and the experiences of at least some of those they aim to assist raises questions about how these strategies are determined and how competing developmental priorities are ranked.

## II Information technology and developmental concerns

### 1 The 'information revolution'

The most cursory glance through published work on IT reveals that world society is widely perceived to be passing through a phase of transition. We are said to be witnessing an '... information technology revolution ...' (Castells, 1996: 5) or 'digital revolution' (Scottish Executive, 2001); we are at the dawn of 'the information society ...' (High-level Expert Group on the Information Society, 1997: 15), or 'moving into the information age' (Scottish Partnerships Across Networks, 1998). As Webster (2002: 8) has observed, the 'operational criteria' of these supposed social transformations are 'curiously vague' in most accounts, and the information revolution is often presented as a *fait accompli* whose characteristics ought already to be evident to the reader. Tracing the sources of these perceptions is therefore not a straightforward task, although if the number of citations is any reflection of influence, then Manuel Castells does indeed live up to Webster's billing as the 'leading commentator on the Information Age' (Webster, 2002: 123). In perhaps his most succinct account of the information technology revolution, Castells (1997: 1) announces that:

The information technology revolution, and the restructuring of capitalism, have induced a new form of society, the network society. It is characterized by the globalization of strategically decisive economic activities. By the networking form of organization. By the flexibility and instability of work, and the individualization of labor.

This 'network society', Castells's trademark, is an impersonal realm of instantaneous communication, where '... global networks of instrumental exchanges selectively switch on and off individuals, groups, regions, and even countries, according to their relevance in fulfilling the goals processed in the network, in a relentless flow of strategic decisions' (Castells, 1996: 3). This mechanistic metaphor, where networks are the grammatical subjects and individuals, groups, etc., are the objects, provides one half of Castells's equation; the other half is constituted by these individuals, who struggle to assert their identity in an increasingly impersonal world. The network society is thus a fractured society, where vast numbers of people throughout the world have been consigned to what has elsewhere been termed the '... class of technological have-nots' (Entman and Firestone, 1996: 35), and become increasingly marginalized by these networks and flows of information and capital.

By making impersonal and abstract forces the drivers of the information revolution, the human angle of Castells's story becomes the plight of the disenfranchised. However, writers who have more cause to feel empowered by these technological advances have focused on the human possibilities now within the reach of users of the technology, rather than the 'impact' of the technology on those who do not use it. Bill Gates, for example, writing for an audience of 'CEOs, other organizational leaders, and managers at all levels' (Gates and Hemingway, 1999: xxi), portrays a consumer's paradise just around the corner, where '... the web will be used to pay your bills, manage your finances, communicate with your doctor and conduct any business' (Gates and Hemingway, 1999: 130). The current or anticipated future use of IT to generate revenue has excited many others, with an Organisation for Economic Co-operation and Development (OECD) report suggesting that 'The diffusion of ICTs [Information and Communications Technologies] throughout the economy has enhanced economic efficiency and substantially boosted productivity growth...' (OECD, 2002: 3).

These two broad types of account of the information revolution – one telling a story of widening inequality, the other of increasing prosperity – are not necessarily in opposition to one another, despite their radically different emphases. One might instead view them as versions of the same story told from the point of view of the disenfranchised on the one hand, and the enfranchised on the other. In both instances, the information revolution is seen to offer considerable opportunities to those in a position to take advantage of them, a perspective that emerges clearly through a number of policy reports, where particular manifestations of the information revolution are presented as social or economic futures from which people will be either included or excluded. The European Commission presents such a case as follows:

If Europe grasps the opportunities presented, the Information Society promises to deliver a range of benefits, including higher living standards, entrepreneurial opportunities to participate in new growth markets, changes to the ways in which existing products and services are produced and delivered with productivity gains, more fulfilling jobs using advanced technologies and flexible working arrangements. (Commission of the European Communities, 2000: 3)

If people do not take advantage of such opportunities, it is said to be because some 'barrier' prevents them from doing so – for example, an earlier OECD report on 'the economic and social impacts of electronic commerce' interprets its predictions of increasing IT use as a sign of various '... barriers to engage in electronic

commerce...’ (OECD, 1998: 1) progressively falling; the European Commission’s ‘eEurope’ scheme congratulates itself in a public information brochure on having ‘achieved significant successes’ in overcoming the factors that have ‘hampered’ uptake of the Internet in Europe (European Commission, 2002: 9).

For policy makers at many different levels of government, then, policy on the information revolution has been treated as a question of differential access to the economic and social advantages of IT as they have been identified by analysts. Various new terms have therefore been coined to express the fact that people are either with or without access to these opportunities. The ‘digital divide’, for example, is a short-hand for the fact that ‘there is a significant proportion of society which does not have access to any of the new communication tools’ (Scottish Executive, 2001: 1). The goal of public policy, therefore, is seen to be to remove the barriers believed to prevent people from using IT: thus a Scottish government report argues that ‘Without intervention, the level of comparative disadvantage experienced by digitally excluded can be expected to worsen’ (Scottish Executive, 2001: 1), while an earlier report to the Canadian government warns that ‘Without appropriate public policies, there is a risk of creating classes of information “haves” and “have-nots”.’ (Information Highway Advisory Council, 1995: 169). The European Commission likewise considers that ‘further efforts will be required to address the problems of those who risk exclusion from the information society...’ (Council of the European Union and Commission of the European Communities, 2000: 16, emphasis removed), while Forestier *et al.* (2002: 625) see a ‘... need for governments to follow an active program of telecommunications rollout to the poor...’.

Thus far, I have presented the information technology revolution from the point of view of those concerned with inequalities within particular territorial boundaries, who have expressed a concern with ensuring that everyone in their respective territory experiences the perceived benefits of using IT. In the following section, I look at how one particular dimension of inequality, between urban and rural areas, has been identified by academics and policy-makers in the UK and elsewhere in Europe, and at how the concern with differential access to IT has been interpreted in terms of this dichotomy.

## 2 IT and rural development

Within the context of European Union policy, it is only in recent decades that rural areas have been considered to have specific developmental requirements beyond financial support for the agricultural sector. The Treaty of Rome, establishing the European Economic Community (EEC) or ‘Common Market’ in 1958 (European Parliament, 2000) devotes a chapter to ‘Agriculture’, and includes in the list of objectives of the ‘common agricultural policy’ a provision ‘to ensure a fair standard of living for the agricultural community, in particular by increasing the individual earnings of persons engaged in agriculture’ (European Union, 1997: 52). In the 1970s and 1980s, enlargements of the EEC and an economic crisis in Europe prompted the European Commission to develop and progressively refine an investment programme based on the alternative concept of ‘regional development’, which included among its objectives ‘to concentrate [...] structural interventions on particularly under-developed regions’ and ‘to finance actions which promoted the

endogenous development potential of the regions concerned' (European Commission, 1997: 36). In the Structural Policy of 1988, various criteria were used to identify these underdeveloped regions: the first, termed 'Objective 1', was based simply on Gross Domestic Product (GDP) per capita, and was applied 'to regions [...] which are lagging behind economically, with a GDP of less than 75% of the EU average' (European Commission, 1997: 36). Other criteria, however, singled out regions with specific characteristics for assistance, thereby making these characteristics markers of disadvantage in themselves, rather than seeing disadvantage as being revealed solely through low GDP per capita. One of these criteria was designed for rural areas, identifying a range of difficulties seen to be specifically rural, thereby allowing rural areas with a GDP of more than 75% of the EU average to qualify for assistance: 'Objective 5b, applying to rural areas with a low level of socio-economic development, a high dependency on agricultural employment, low agricultural incomes and population problems (low density or declining population)' (European Commission, 1997: 37). 'Objective 6', arising from accession negotiations with Finland and Sweden and therefore restricted 'to regions north of the 62nd parallel', made 'very low population density (below 8 inhabitants per km<sup>2</sup>)' an additional qualifying criterion for receipt of Structural Funds (European Commission, 1997: 37), thereby offering financial support to rural areas (generally defined according to low population density) in those countries that did not meet either of the two previous indicators of disadvantage.

We have therefore witnessed a gradual transition in European policy affecting rural areas from a strategy of providing financial support purely for agricultural production, to funding instruments containing an increasing emphasis on 'rural development [which should] address all socio-economic sectors in the countryside' (The European Conference on Rural Development, 1996). This appears in part related to a perception of '... the declining importance of agriculture as a source of rural income and employment ...' (Bryden and Fuller, 1987: 7), so that the development of rural areas depends instead on the 'diversification of economic and social activity ...' (The European Conference on Rural Development, 1996). Nevertheless, if income and employment levels were to form the sole basis for channelling European funds into development, then many urban areas would exert a greater claim on these resources than many rural ones. For example, official statistics on both unemployment and 'household deprivation' in Scotland have been on average lower in rural areas than in urban ones, although the measurement and definition of both has been criticized as 'urban-oriented' (Departments of Geography and Land Economy, University of Aberdeen, 1996: 81).

Those who have argued in favour of devoting resources to rural development, rather than to addressing deprivation wherever it happens to arise, have therefore tended to claim that 'the nature of deprivation is different in urban and rural areas' (Higgs and White, 1997: 441), and that there are developmental problems specific to rural areas that public funding should be directed to resolving. One writer's list is as follows: 'Rural communities are currently facing a number of particular challenges such as depopulation, declining agriculture, lack of employment opportunities, social exclusion, poor infrastructures and the protection of the environment' (O'Malley, 2003). One underlying cause identified by many other writers, however, is the 'remoteness' or 'peripherality' of rural areas. Thus Copus (1997: 5) reports that '... the Objective 1 plan for the Highlands and Islands

[of Scotland] places peripheral location at the top of its list of “economic and social characteristics and problems”. What rural areas are said to be peripheral to or remote from varies across the literature – some measures of peripherality are based on GDP, others on population (Copus, 1997: 5). Either way, from the definition alone, ‘rural’ areas will be more remote than ‘urban’ ones. Definitions of rural areas are often in any case also expressed in terms of low population densities and low GDP, so in many cases it is tautological to state that rural areas are remote. Indeed, one such classification, based on both population density and GDP, uses the terms ‘very rural’, ‘rural’ and ‘intermediate rural’ to express the degree of remoteness from population centres (Analysys, 1990). Measures of peripherality therefore serve as a means of expressing one of the difficulties seen to apply specifically to rural areas, and to identify those rural areas seen to face the greatest ‘locational disadvantages’ (Copus, 1997: 32).

Given this emphasis on spatial factors in analyses of rural disadvantage, the terms in which the benefits of the information technology revolution have generally been described have understandably appealed to those with an interest in rural development, many of whom have seen in IT the answer to specifically rural problems. A pamphlet published by the UK Government’s Information Society Initiative, for example, proclaims that with the arrival of IT, ‘Work is no longer dependent on geography’ (Information Society Initiative, 1998: 5). If this is so, then for rural areas, defined in geographical terms that have come to be seen as markers of deprivation, some sort of recovery may appear to be at hand. The enthusiasm in the literature that initially greeted the prospect of using IT in rural areas is compelling testimony to the hope it must have aroused at that time amongst those with an interest in rural development. Bryden and Fuller (1987: 13), reporting on a seminar held in 1986 entitled ‘New Technology and Rural Development’, begin by highlighting a list of rural development problems, and then suggest:

Many of the potential benefits of new technology for rural people derive from the fact that it is effectively shrinking distance. It has been this physical problem of distance, affecting both the cost and feasibility of economic, political, social and cultural activity, and the feelings of isolation and peripherality, that has created many of the problems described . . .

While elements of temperance have crept into most accounts since the initial heady pronouncements of a remedy for distance, arguments that IT provides solutions to the problems of rural areas in particular continue to be advanced. Smith (1998: 184), for example, suggests in an account of initiatives to encourage and support teleworking in the Western Isles of Scotland that ‘As the aspirations of the younger generation increase with regard to employment and lifestyle in rural areas, one could predict that teleworking based jobs may provide part of the solution to the continued sustainability of such rural areas’.

Policy makers and advisors have taken up this theme, sharing the view that IT offers the prospect of a revival of the economic and social conditions in the rural areas under their jurisdiction. A European Commission report produced under the guidance of Commissioner Bangemann (High-level Expert Group on the Information Society, 1994) is said by several writers (e.g., Ray and Talbot, 1999: 154) to have been pivotal in shaping subsequent attitudes amongst rural development policy makers in European Union member states. Nowadays it is rare to encounter a report on rural development that does not mention opportunities provided by

IT: for example, a Scottish Executive (2000) policy statement on 'Rural Scotland' announces that:

Developments in information and communications technology (ICT) are already bringing new opportunities to rural areas, and there is huge potential for further development. The new technology enables knowledge workers, who are generally in well-paid and secure employment, to choose to combine work with a high quality physical environment.

In short, in many quarters, information technology has been hailed as a 'key enabler for rural development' (European Commission, 2001, 2003). Nevertheless, a number of writers have also identified 'barriers' to using IT which affect rural areas to a greater extent than urban ones, thereby making it more difficult to realize the benefits identified. One such barrier is the availability and capacity of telecommunications infrastructure in rural areas, generally substantially below the service levels available to urban residents. In the Highlands and Islands of Scotland, for example, the head of projects and research for the regional development body Highlands and Islands Enterprise stated in 1995 that:

It became apparent from early discussions with British Telecom that the existing telecommunications network was wholly inadequate for modern purposes, without fibre optics, digital exchanges, even kilostream. Furthermore BT had no plans to upgrade the network in the area. The prospective commercial return on the large investment from such a sparsely populated area was too low to justify the expenditure. Left to commercial forces, the new services were unlikely to come to the Highlands and Islands for another twenty years ... (Bibby, 1995)

Legislators have sought to address the unequal spatial distribution of telecommunications infrastructure by aiming to ensure 'universal service', defined by the European Commission in its Green Paper on Infrastructure (II) as 'access to a defined minimum service of specified quality to all users everywhere and, in the light of specific national conditions, at an affordable price' (cited in Hart, 1998: 841). The distribution of the costs of extending this 'defined minimum service' to areas where, like the Highlands and Islands of Scotland, the commercial return is lower than the cost of providing the service, is clearly always likely to be a contentious issue (see Cooper, 1996 for an overview of debates on the subject in the USA). In consequence, any politically acceptable definition of minimum service is unlikely to meet the needs of those who wish to be at the forefront of the information revolution. In the Highlands and Islands, these tensions led to an additional investment of around £5 million from public funds being made towards the total £20 million cost of upgrading existing infrastructure to a level considered sufficient for 'modern purposes' (Bibby, 1995), considerably above the minimum service defined in legislation. Highlands and Islands Enterprise justified this expenditure on the grounds that it would enable them 'to overcome the geographical disadvantages of the area' by unlocking 'a huge field of commercial opportunities for the north of Scotland' (Bibby, 1995).

### **III The promotion of IT by public-sector organizations**

The dominant view outlined thus far is that the 'information society' offers substantial economic and social benefits to those included within its compass, while those who are 'excluded' will incur corresponding penalties. This perception has led governmental organizations at a range of territorial levels to assign a high

priority to increasing the uptake of IT among those under their jurisdiction, expressed in terms of removing the 'barriers' preventing people from adopting IT. While the capacity of telecommunications infrastructure and other concerns relating to the availability of access to the Internet have been identified as potential barriers, they are by no means considered to be the only, or even the principal, reasons why people might be excluded from the information society. A Scottish Executive (2001: 12) report entitled *Digital inclusion* places an alternative obstacle at the top of the list – in a section describing the measures the government will take as steps towards 'Breaking the barriers', headed by actions under the heading 'Awareness and promotion', the report states:

In the latest ONS [Office of National Statistics] statistical report on internet access and usage in the UK the main reason given by non-internet users for not getting on-line is lack of interest. For this reason, it is absolutely essential that we ensure excluded individuals and groups are aware of the opportunities that ICTs can provide, and are encouraged or provided with incentives to take advantage of them.

An earlier report by the Digital Scotland Task Force (2000: 46) elaborates on the means to be employed to overcoming this lack of interest, advocating that: 'Promotional activity by the Scottish Executive, the UK government and local authorities – campaigns, workshops, IT awareness days – should cover all relevant sections of society and be focused on the benefits which individuals can derive from ICTs.' The UK Government's own initiative likewise aims to reach as wide a constituency as possible, through its 'national campaign to enable everyone in the UK to make the most of the internet', which includes 'a major multi-media public facing awareness campaign [...] with advertising on terrestrial and Sky Digital TV supported by a contact centre, campaign website and substantial PR campaign' (Office of the e-Envoy, 2003).

Just as the benefits of IT identified by different organizations differ in some respects in function of the organization's remit, so promotional activity is likewise adapted to these organizations' different constituencies. While national governments focus on 'everyone in the UK' or on 'all relevant sections of society', rural development organizations are concerned with promoting IT specifically to those living in rural areas. In accordance with the view explored earlier that IT presents advantages to those living in rural areas above and beyond those it has for society as a whole, IT promotion has been taken especially seriously in the field of rural development: as Ray and Talbot (1999: 154) have observed, 'Rural development agencies in the United Kingdom all have policies to promote telematics activity ...'.

The promotion of IT use in rural areas tends to present both the supposedly general benefits of IT for society as a whole, and the message that IT is somehow of especial significance for rural residents. Highlands & Islands Enterprise (2002: 17), for example, signals in its latest strategy report its ongoing intention '... to ensure wide take-up of the opportunities of the knowledge economy ...' among businesses in the region, a message it shares with development organisations without a rural remit. It also relates '... the gains brought by digital telecommunications in the last decade ...' to the region to the fact that '... distance-shrinking can now be tackled by electronic communications ...', thereby '... countering the effects of physical remoteness ...' (Highlands & Islands Enterprise, 2002: 18). At times this latter message is presented in a sparser fashion, consisting simply of advertising



the message that IT and rural areas should somehow be associated: in an issue of the magazine of the European rural development initiative LEADER devoted to the subject of 'Rural development in the information society', pictures of rural and information technology icons are juxtaposed or combined. This same issue also employs another widespread advertising technique, presenting individual examples of IT use in rural areas as successful case studies, with the implication that their achievements can and should be widely replicated (*Leader Magazine*, 1998).

Having provided an indication of the nature of the efforts of public-sector organizations to encourage the uptake of IT among those within their territorial boundaries, and in particular in rural areas, through promotional activity, I now proceed to look at evidence of the success or otherwise of this strategy. The following section considers a range of studies of the extent of IT use, principally in the UK. Once again, I examine both national studies and those looking specifically at rural areas.

#### **IV Extent and character of IT use**

Determining what effect promotional activity of this kind has had on the number of people using IT is likely to be a complex if not impossible task. Nevertheless, studies of two kinds have a potential contribution to make to the question: in this section I look first at some examples of quantitative studies of IT use, where the aim has been to find out how many people or businesses within a given territory make use of IT in some capacity. Those studies allowing comparisons to be made over time, or between rural and urban areas, may afford some scope for speculation as to the impact of attempts to promote IT. Secondly, I shall consider two qualitative studies of IT use that contribute to the assessment of the value of promotional activities in two ways. These studies, by providing detailed accounts of the ways in which particular individuals use IT, afford a means of determining whether the grounds of IT promotion – that there are barriers to be overcome in order to realize the benefits of the information society – are reflected in the practical experiences of those users. They also allow us to directly assess the influence of promotional material through their exploration of the factors behind initial decisions to adopt IT, and in particular on the forms of communication used to convey information about IT.

Quantitative studies of IT use, particularly the most recent ones, have generally reported results that their authors have found disappointing in the light of the substantial predicted or hoped for increase in use. The OECD *Information technology outlook* (2002: 7) reminds us of the fact that 'Electronic commerce has the potential to alter economic activity and the social environment', but reports that despite this, 'In the aftermath of the "dot com" crash, many start-ups that sold and/or purchased exclusively on line have disappeared, and growth in electronic commerce transactions has been less spectacular than predicted'. However, while electronic commerce may not have expanded as dramatically as hoped, it has nevertheless shown an increase: '... the volume of electronic transactions is growing and the Internet is increasingly used as a transaction channel, particularly for purchases' (OECD, 2002: 7). Quarterly surveys conducted for the UK Office of Telecommunications (OfTel) portray a broadly similar picture over the most recent survey periods for levels of home and business use. Their survey of residential consumers for the quarter ending November 2002 reports: 'Currently 42% of UK homes have Internet

access. Following slowed growth in home Internet penetration it appears to have reached a plateau, having remained at a broadly similar level in the last 12 months' (OfTel, 2003: 9). The counterpart survey reporting on levels of use among small- and medium-sized enterprises (SMEs) over the same period finds a higher level of use (67%) than among residential consumers, although this too 'has not changed since last wave', and represents only a slight increase over the whole year (OfTel, 2002: 10).

Earlier studies focusing on IT use in rural areas in the UK likewise report results many authors have found disappointing. Mitchell and Clark, for example, looking at rural areas in England that are 'well served by telecommunications networks' (Mitchell and Clark, 1999: 449) announce that 'Firms in rural areas have adopted ICTs in low numbers . . .' (Mitchell and Clark, 1999: 454). Given that a lack of suitable infrastructure cannot be said in the areas of their study to be a barrier to IT adoption, the authors seek instead to explain their findings, interpreted by means of a comparison with levels of use in urban areas, through psychological characteristics they consider to be peculiar to people living in rural areas. Most rural firms, they conclude, '... are small, inward-looking and are run by managers who do not link investment in technology with business success' (Mitchell and Clark, 1999: 454). They believe that rather than seizing the opportunities promised in material promoting the benefits of IT for those living in rural areas, '... rural businesses adopt and use ICTs because of pressures imposed upon them by their customers and suppliers' (Mitchell and Clark, 1999: 454). Ilbery *et al.* (1995: 58) share this view, describing 'peripheral areas' as '... characterized by technological backwardness and relative isolation'. They interpret lower levels of IT use in rural areas as signs that in addition to the possibility of barriers such as a lack of suitable infrastructure, rural areas are faced with a host of intangible obstacles to participation in the information society: 'A range of cultural, institutional and psychological barriers may act as resistances . . .' (Ilbery *et al.*, 1995: 58).

Such studies, by providing indications of the numbers of people making use of IT, are thus generally interpreted within the framework set out in the literature covered above, whereby tangible and intangible obstacles must be overcome in order for the benefits of the information society to be realized by all. Usage figures therefore become an indication of the success or otherwise of attempts by governmental organizations to overcome these barriers, chief amongst which is considered to be a lack of interest in IT. However, a somewhat different picture emerges from Miller and Slater's (2000) ethnographic research on IT use in Trinidad, as well as from my own interviews with IT users and nonusers in the Highlands and Islands of Scotland.

A common feature of both studies is that the majority of IT users interviewed tended to report being interested not so much in notions such as participating in an information society, as in, as Miller and Slater (2000: 6) report, '... whether Internet media provided effective or appropriate means to pursue practical projects'. In the Highlands and Islands of Scotland, many users reported that they considered IT to be 'just a tool' (Richards, 2002: 186) that was used to facilitate existing business tasks. A consequence of this instrumental approach is that businesses which saw few apparent pragmatic benefits from using IT for existing business activities, or where the costs of acquiring and learning to use new equipment were felt to outweigh the anticipated benefits, would be unlikely to invest in IT (Richards, 2002: 193). Such accounts highlight a disparity between on the one hand the general assumption in the literature outlined thus far that the benefits of using IT are unquestionable,

with the remaining question then being what it is that prevents everyone from taking advantage of them, and on the other hand the pragmatic concerns of, for example, business owners, who question instead whether the technology is capable of helping them to achieve their own objectives.

The second contribution of these studies to the matter at hand has been to give an indication of the success of promotional campaigns in increasing IT use by advertising its perceived benefits. The accounts users provide of how their awareness of and interest in IT was aroused suggest that this influence has been slight. Miller and Slater (2000: 29), for example, found that rather than being drawn from public campaigns of this kind, '... information moves through extended family, friendship and community channels'. This observation recalls Hägerstrand's theoretical account of innovation diffusion, where 'Acceptance [of an innovation] does not occur until resistance [...] has been overcome through repeated receipt of *private information* from persons who previously accepted the innovation' (Hägerstrand, 1967: 266, emphasis mine). Miller and Slater (2000: 58) provide the following illustration of this influence at work: '... several older people came into one of our ethnographic sites (a little shop with an online computer) brandishing letters from relatives abroad instructing them to set up an e-mail account, and giving their own address'.

This form of communication was termed 'word of mouth' by those in my own fieldwork locations, and was widely mentioned as the source of information about IT, with personal communication of this kind also often being the means by which practical skills were acquired and recommendations passed on. By contrast, when people referred to the promotion of IT through a medium perceived as impersonal, covering in particular the majority of formats referred to in the promotional campaigns detailed above, such communications were very frequently dismissed as 'hype'. These impersonal messages, presenting the benefits of IT use as universal and general, were routinely criticized by interviewees by arguing from the point of view of their individual circumstances, suggesting that the general rather than particular character of such messages was one of the factors that aroused their mistrust.

## V Conclusions

This review began with an outline of literature claiming that we are experiencing an information revolution, or entering an information society. We then saw how these concepts have been widely interpreted as describing a state of grace, which those having the necessary resources and capacities may enter, but from which those in whose way barriers stand will be excluded. Given such a view, organizations concerned with the welfare of particular groups of people, particularly those already seen to be at a disadvantage in terms of their resources and capacities, have understandably focused on attempting to bring the perceived benefits of the information society within the reach of these groups. Rural development in Europe provides an example of how this approach has been adopted in the context of a particular developmental cause, with perceptions of rural disadvantage that have taken shape over several decades being combined with the notion of an emerging information society open only to those able and willing to use IT. The information revolution is described in that body of literature as proffering remedies for the disadvantages that have been used to define rural areas for the purposes of directing European Union funding, while

those same disadvantages are also said to constitute barriers that make it more difficult for those living in rural areas to enter the information society.

Nevertheless, the orthodox view of an information revolution is not of course without its critics. Webster (2002: 9), for example, has declared himself to be sceptical of claims that we are entering an information society, caricaturing the reasoning he believes to be employed by many writers as follows: '... there is more information nowadays, therefore we have an information society'. Others (e.g., Thrift, 1995; Stein, 1999; Richards, 2002) have drawn our attention to the similarity between claims made regarding the revolutionary character of IT and those advanced in previous ages with respect to the telegraph, telephone, television, etc. They thereby suggest that telecommunications advances have often led to such a perception of revolution, whereas with hindsight social transformations associated with them, albeit sometimes significant, have tended to be more modest than predicted. May objects more to the fact that the information society is generally portrayed as already determined, the only aspect remaining to be settled being whether particular individuals or groups will be included or excluded. Instead, he suggests, we should not '... accept that any particular version of the information society is inevitable, including our own preferred option. As before, (information) society will be what we make of it, and therefore the battle to conceive of the future is important and should not be left to the technicians, or the policy-makers alone' (May, 2002: 161).

These voices of dissent do indeed seem to reflect the empirical studies of the extent or character of IT use outlined above more accurately than does the notion of a new form of society one enters through the use of IT. Despite widespread promotional campaigns conducted by public organizations, levels of IT use appear in recent UK surveys to be reaching a plateau well short of saturation point. This suggests either that certain obstacles to entering the information society are proving especially stubborn – the view advanced by many of those who have conducted such surveys – or that the information society as it is presented in promotional campaigns has not aroused universal enthusiasm. The two studies mentioned here where interviews have been conducted with IT users in particular geographical locations – Trinidad and the Highlands and Islands of Scotland – suggest that the latter explanation should be considered a significant factor in at least some cases. In the Highlands and Islands, many nonusers were able to explain their decision not to adopt IT through a rational evaluation of the relative advantages and disadvantages from the point of view of their own needs and interests. In the main they accounted for such decisions not by reporting that barriers were preventing them from using IT, but rather that they did not see any significant benefits for themselves in doing so. It would be misleading to dwell overmuch on examples of nonuse in the Highlands and Islands, as IT is used extensively there and for a variety of different purposes. However, users tended to view IT as a tool to be employed in order to attain distinct pragmatic ends, and not as an entrance ticket to a new form of society. In particular, the motivation to use IT was generally based on communications with personal contacts, and where promotional campaigns were referred to, they were often dismissed as 'hype'. It therefore appears that to those interviewed in the course of this study, if there could be said to be such a thing as an information society then it was indeed, as May has urged, what these people had made of it, and bore little if any relation to the version portrayed in promotional materials.

Nevertheless, there is one risk of taking such perspectives as universal, in that the inequalities that had led the writers whose views were presented earlier to express concern about differential access to the information society may then pass unnoticed. Few people mentioned in this study reported experiencing particular barriers preventing them from using IT, although some expressed a wish for telecommunications infrastructure on a par with urban areas. Nevertheless, in other locations access to IT, as with access to many other resources, is undoubtedly unevenly distributed. However, as many people in the Highlands and Islands of Scotland felt that there were many more pressing developmental priorities than access to IT, such as high transport costs and the availability of fresh produce in local shops (Richards, 2002: 102), there are certainly grounds for questioning whether developmental efforts and funds are being wisely spent in attempting to increase IT use, particularly where this takes the form of attempts to persuade people through promotional campaigns to 'enter the information society'. After all, as an otherwise enthusiastic OECD report on the potential of e-commerce acknowledges, 'Visions of a global knowledge-based economy and universal electronic commerce characterised by the "death of distance" must be tempered by the reality that half the world's population has never made a telephone call, much less accessed the internet' (OECD, 1998: 12). The work presented here should alert us to the possibility that in at least some locations there may be a need for greater dialogue between organizations with a development remit and those they seek to serve, rather than promotion aimed at furthering the preferred options of organizations.

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### References

- Analysys** 1990: *Opportunities for application of information and communication technologies in rural areas – economic development and employment indications: volume II*. Cambridge: Analysys.
- Bibby, A.** 1995: *Teleworking: thirteen journeys to the future of work*. London: Calouste Gulbenkian Foundation.
- Bryden, J. and Fuller, T.** 1987: *New technology and rural development: report of a seminar held in Scotland, 5–9 October 1986*. Enstone: Arkleton Trust (Research).
- Castells, M.** 1996: *The rise of the network society*. Cambridge MA: Blackwell.
- 1997: *The power of identity*. Malden: Blackwell.
- Commission of the European Communities** 2000: *Strategies for jobs in the information society*. Brussels: Commission of the European Communities.
- Cooper, M.** 1996: *Universal service: a historical perspective and policies for the twenty-first century*. Benton Foundation. <http://www.benton.org/publibrary/uniserve-prospective/prospects.html> (last accessed 30 March 2004).
- Copus, A.K.** 1997: *A new peripherality index for European regions – report prepared for the Highlands and Islands European partnership*. Aberdeen: Scottish Agricultural College.

- Council of the European Union and Commission of the European Communities** 2000: *eEurope 2002 – an information society for all*. Brussels: Commission of the European Communities.
- Departments of Geography and Land Economy, University of Aberdeen** 1996: *Scottish rural life update*. Edinburgh: The Scottish Office.
- Digital Scotland Task Force** 2000: *Digital Scotland task force report*. Scottish Executive. [http://www.scotland.gov.uk/digitalscotland/digital\\_scotland.pdf](http://www.scotland.gov.uk/digitalscotland/digital_scotland.pdf) (last accessed 15 February 2000).
- Entman, R. and Firestone, C.M.** 1996: *The communications devolution*. Washington DC: The Aspen Institute.
- European Commission** 1997: *Rural developments – CAP 2000 working document*. Brussels: European Commission.
- 2001: Information society as key enabler for rural development and integration. European Commission. [http://europa.eu.int/information\\_society/topics/ebusiness/ecommerce/erural/background\\_information/print\\_en.htm](http://europa.eu.int/information_society/topics/ebusiness/ecommerce/erural/background_information/print_en.htm) (last accessed 13 April 2004).
- 2002: *Towards a knowledge-based Europe*. Brussels: European Commission.
- 2003: *Information society as key enabler for rural development*. European Commission. [http://europa.eu.int/information\\_society/topics/ebusiness/ecommerce/erural/agenda/agenda2.htm](http://europa.eu.int/information_society/topics/ebusiness/ecommerce/erural/agenda/agenda2.htm) (last accessed 13 April 2004).
- European Conference on Rural Development**, 1996: The Cork Declaration – A living countryside. European Commission. [http://europa.eu.int/comm/agriculture/rur/cork\\_en.htm](http://europa.eu.int/comm/agriculture/rur/cork_en.htm) (last accessed 13 April 2004).
- European Parliament** 2000: *The Treaty of Rome and green Europe*. Luxembourg: European Parliament.
- European Union** 1997: *Consolidated version of the treaty establishing the European Community*. Luxembourg: Office for Official Publications of the European Communities.
- Forestier, E., Grace, J. and Kenny, C.** 2002: Can information and communication technologies be pro-poor? *Telecommunications Policy* 26, 623–46.
- Gates, B. and Hemingway, C.** 1999: *Business @ the speed of thought*. London: Penguin.
- Hägerstrand, T.** 1967: *Innovation diffusion as a spatial process*. Chicago IL: University of Chicago Press.
- Hart, T.** 1998: A dynamic universal service for a heterogenous European Union. *Telecommunications Policy* 22(10), 839–52.
- Higgs, G. and White, S.D.** 1997: Changes in service provision in rural areas. *Journal of Rural Studies* 13(4), 441–50.
- High-level Expert Group on the Information Society** 1994: Europe and the Global Information Society. Humboldt-Universität zu Berlin. <http://www.rewi.hu-berlin.de/jwa/proj/dsi/report.html> (last accessed 30 March 2004).
- 1997: *Building the European information society for us all*. Luxembourg: Office for Official Publications of the European Communities.
- Highlands & Islands Enterprise** 2002: *A smart, successful scotland – the highlands and islands dimension*. Inverness: Highlands and Islands Enterprise.
- Ilbery, B., Clark, D., Berkeley, N. and Goldman, I.** 1995: Telematics and rural development: evidence from a survey of small businesses in the European Union. *European Urban and Regional Studies* 2(1), 55–68.
- Information Highway Advisory Council** 1995: *The challenge of the information highway – final report of the information highway advisory council*. Ottawa: Industry Canada.
- Information Society Initiative** 1998: *Working anywhere – exploring telework for individuals and organisations*. London: Department of Trade and Industry.
- Leader Magazine** 1998: *Rural development in the information society*. No. 19.
- May, C.** 2002: *The information society – a sceptical view*. Cambridge: Polity Press.
- Miller, D. and Slater, D.** 2000: *The internet: an ethnographic approach*. Oxford: Berg.
- Mitchell, S. and Clark, D.** 1999: Business adoption of information and communications technologies in the two-tier rural economy: some evidence from the South Midlands. *Journal of Rural Studies* 15, 447–55.
- Office of the e-Envoy** 2003: *UK online campaign*. Office of the e-Envoy. [http://www.e-envoy.gov.uk/oe/oe/sections/briefings-top/\\$file/onlinecampaign.htm](http://www.e-envoy.gov.uk/oe/oe/sections/briefings-top/$file/onlinecampaign.htm) (last accessed 25 January 2003).
- Oftel** 2002: *Key trends in fixed and mobile telephony, and internet – business consumers*. London: Oftel.

- 2003: *Key trends in fixed and mobile telephony, and internet – residential consumers*. London: Oftel.
- O'Malley, M.** 2003: Sustainable rural development. Sustainable Ireland. <http://www.sustainable.ie/resources/community/art03.htm> (last accessed 13 April 2004).
- Organisation for Economic Co-operation and Development** 1998: *The economic and social impacts of electronic commerce: preliminary findings and research agenda, executive summary*. Paris: OECD.
- 2002: *OECD information technology outlook 2002*. Paris: OECD.
- Ray, C. and Talbot, H.** 1999: Rural telematics – the information society and rural development. In Crang, M., Crang, P. and May, J., editors, *Virtual geographies – bodies, space and relations*. London: Routledge, 150–63.
- Richards, C.** 2002: Information technology in the Highlands & Islands of Scotland. Ph.D. Thesis, University of Aberdeen.
- Scottish Executive** 2000: Integral, dynamic and with an appetite for change. In *Rural Scotland: a new approach*, Scottish Executive, Chapter 2. <http://www.scotland.gov.uk/library2/doc15/rsna-04.asp> (last accessed 13 April 2004).
- 2001: *Digital inclusion – connecting Scotland's people*. Edinburgh: Scottish Executive.
- Scottish Partnerships Across Networks** 1998: *Moving into the information age – an international benchmarking study for Scotland* 1998. Glasgow: Scottish Enterprise.
- Smith, M.M.** 1998: The European ICT revolution – a case study on the rural economy of the Western Isles of Scotland. In Saukkonen, P. and Vihinen, H., editors, *Rural and regional development*. Mikkeli: University of Helsinki, 167–85.
- Stein, J.** 1999: The telephone – its social shaping and public negotiation in late nineteenth- and early twentieth-century London. In Crang, M., Crang, P. and May, J., editors, *Virtual geographies – bodies, space and relations*. London: Routledge, 44–62.
- Thrift, N.** 1995: A hyperactive world. In Johnston, R.J., Taylor, P.J. and Watts, M.J., editors, *Geographies of global change – remapping the world in the late twentieth century*. Oxford: Blackwell, 18–36.
- Webster, F.** 2002: *Theories of the information society*. Second Edition. London: Routledge.